

# AMERICAN ARTISAN and Hardware Record

Vol. 82. No. 3.

620 SOUTH MICHIGAN AVENUE, CHICAGO, JULY 16, 1921.

\$2.00 Per Year.

## Friedley-Voshardt Co.

*Architectural Sheet Metal  
Ornaments, Statues, etc.*



No. 8413  
Design—Pat. Pending

FOR many years the trade has conceded us the leadership in the industry and art of Sheet Metal Architectural Work and as each year passes we give the trade more reason to expect us to produce the best and most beautiful work of this kind to be had. We have the finest equipped sheet metal plant in the country and many of our machines are of special build in order to turn out work of the highest class. We employ our own modelers and are therefore able to make special designs to your order. Our catalog No. 34 contains over 100 pages of illustrations of stock designs on which we can always make prompt shipments.

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# The New Series



**Monarch**  
MALLEABLE

The "Stay Satisfactory" Range

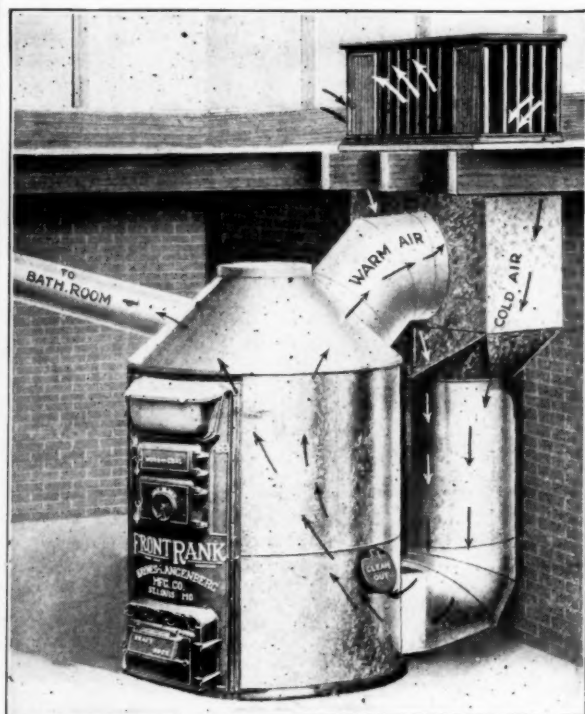
Is the latest development in Malleable Range construction.

Many new and practical improvements which the new 4000 series MONARCH possesses distinguish this range from all others.

At a price which assures you a substantial margin of profit the MONARCH line will appeal to your trade. Investigate now and prepare for fall business.

*Prices and full information regarding all sizes and styles will be furnished upon request.*

**MALLEABLE IRON RANGE CO.**  
BEAVER DAM - - - WISCONSIN



**A**  
**FRONTRANK**  
TRADE NAME REGISTERED

COMBINATION OF  
BEAUTY AND UTILITY

Furnacemen will find this combination simple and easy to sell and install, as well as a most efficient heater, very pleasing to the owner.

WRITE TODAY

If desired, we will gladly plan every installation for you.

**HAYNES-LANGENBERG MFG. CO.**  
4058 FOREST PARK BOULEVARD  
ST. LOUIS, MO.

FOUNDED 1880  
BY  
DANIEL STERN  
Thoroughly Covers  
The Hardware, Stove,  
Sheet Metal, and Warm  
Air Heating and Venti-  
lating Interests

# AMERICAN ARTISAN and Hardware Record

Address all communications and  
remittances to  
AMERICAN ARTISAN  
AND  
HARDWARE RECORD  
620 South Michigan Avenue  
Chicago, Illinois

PUBLISHED EVERY SATURDAY BY ESTATE OF DANIEL STERN

TERMS OF SUBSCRIPTION IN THE UNITED STATES AND ITS POSSESSIONS (Invariably in Advance) ONE YEAR POSTAGE PAID \$2.00  
FOREIGN COUNTRIES ONE YEAR POSTAGE PAID \$4.00 CANADA ONE YEAR POSTAGE PAID \$3.00

Entered as Second-Class Matter June 25 1885 at the Post Office at Chicago, Illinois under Act of March 3rd 1879

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## DO YOU KNOW YOUR BUSINESS?

A touchy question?

If you look at it in this way, don't read this editorial, for most likely it will not do you any good.

But if you will admit that there may be some points about your business that you are not as well posted on as you would like, go ahead and read the rest.

For example, can you or any of your salespeople give a real reason as to why a saw selling at \$3.80 is better than one that retails at \$1.39?

Do you really know what makes a \$150.00 kitchen range better than the mail order stove that is offered at \$97.50.

Can you give your prospective customer a real explanation of the vital difference between a \$2.00 hammer and one that sells at 98 cents?

If you can not give definite, conclusive, convincing reasons for these differences—then there is something vital lacking in your business education—

And the sooner you post yourself and your salespeople on this important matter—

The better will it be for your business.

The acquisition of this sort of information will mean easier sales, larger volume of business, greater profits and a higher standing as a merchant among your people.

It isn't enough, however, for you to know, in general that a range is made "in a high class manner, from high grade materials, by high class mechanics."

Words are cheap, and a general statement of that sort carries no conviction, unless specific points of information are brought out to corroborate the statement.

Anybody can make claims of that sort, and the unscrupulous competitor who cares little

or nothing about his reputation is always free with superlatives and high sounding praise for his article, so long as nothing specific is required of him.

His claims are just as plausible as yours, unless you prove your case by actual facts—

And you can not give facts about your goods unless you "know" them—

And "knowing" your goods means something more than, for example, that one stove is made of cast iron and another of steel or malleable iron.

It means more than a superficial knowledge of the material of which a saw is made.

It means an intimate knowledge of the process of manufacture of the saw, so that you can explain the real distinction between two saws of different quality.

Read the article published in our issue of July second, on pages 17 and 18, and you will appreciate why Jones was able to sell the \$3.80 saw to a man who came in with the intention of buying one for \$1.48.

Then read the article on pages 20 and 21 of our July ninth issue, and you will readily see some of the important points of difference—from a selling standpoint—between the "variety store" kind of shears and a real pair of shears, such as are used by good dressmakers or tailors, and which you can sell to most of your customers—if you "know."

In future issues of American Artisan and Hardware Record, there will be published a series of articles that will bring out the salient features of well made, high grade tools and other hardware of various kinds.

Watch for them. Read them.

See that your salespeople read them.

You will sell more tools, better tools, at better profits, by studying these articles.



## Random Notes and Sketches

By Sidney Arnold

Some of you may know what a "kingbolt" is. For the information of those who do not, I quote from Webster, "a vertical bolt by which the front axle and wheels of a vehicle are connected with the other parts."

This bolt is about fourteen inches long, and a little over one inch in diameter, with a head about two inches in diameter and a slot at the bottom for a cotter pin, as used on the old style "Escort Wagon" of the Army.

The price which Uncle Sam was required to pay for this bolt was somewhere near fifty cents each by the tens of thousands.

This will give you some idea of where the money went you paid out for Liberty Bonds.

It will also give some of you a notion that those who were in charge of purchasing supplies for the Army during the War, were not in the same class as the up-to-date buyer for a small wholesale house, or that somebody was much more clever as a salesman than the men who are selling steel to the wagon manufacturers today.

And you are quite right in both respects. For example, the chief Purchasing Officer at the Jeffersonville, Indiana, Quartermaster Depot, which for the early part of the Great War was the headquarters for the procurement of harness and for horse drawn vehicles, was a former attache of Tammany Hall in New York City who had been holding a job in the Fire Department Supply Division of that city, and his chief assistant was a former salesman for an engraving concern in Indianapolis.

To be sure, the head of the "Wagon Branch" was a retired wagon manufacturer of many years' experience, but his objections were overridden, and it was openly stated that his name was taken off the first list of promotions at this Depot because of his strenuous opposition to the approval of the prices at which purchases of Escort Wagons and parts for same were to be made.

It might not be a bad plan for the Department of Justice to include in its investigations of War Purchases a little questioning of the methods pursued by the Division of Animal Drawn Vehicles.

\* \* \*

If there is any special type of man that I dislike it is the fellow who makes it appear that he is so very anxious to have everything just so and every point absolutely fixed before he will go ahead. And the next class is composed of those who appear to be altogether indifferent to the exigencies of the particular case that requires action.

Between these two classes, it has taken Congress more than two years and six months to provide a way by which decent treatment can be assured for our disabled veterans of the World War.

To be sure, appropriations have been made; the money is there; but the bunch of chairwarmers in the Government Bureaus and the indifferent attitude of Congress and of the people in general have actually prevented the proper functioning of the laws passed for the welfare of these unfortunate men.

Being an old artillery man and more recently a quartermaster, I can quite easily appreciate the difference between prompt action and red taped delay.

What we want now is a heavy, concentrated attack on Congress, in the shape of a bombardment of letters to our Congressmen and Senators to tell them that they have dallied long enough on this important matter, and that the "Zero Hour" has arrived for them to pass the Sweet Bill for the consolidation of the relief work for disabled veterans.

\* \* \*

Here is a clipping which you will enjoy. It was sent me by my friend W. A. Denny of New Hampton, Missouri, former President Missouri Retail Hardware Association:

On the day after the armistice that ended the not-so-late war a Southern mountaineer, driving down from the hills on one of his rare visits to town encountered a whiskered squirrel hunter.

"What was that thar racket down to the Forks last night, stranger?" he inquired. "Red lights and fireworks and sechlike. Sounded like it mought be some sort of a celebration."

"It shore was," said the other. "Didn't ye hear? The war's over."

"It is? Say, did we—did we win?"

"We shore did."

"Hooray!" shouted the mountaineer. "It took a lettle more time than I expected but I never had a doubt for one durn minute but what we'd finally lick them damyanks."

\* \* \*

If you had the most painful toothache in all your experience, you could not help smiling at the answer of little Freddie in the subjoined dialog, sent me by John C. Henley of Tanner & Company, Indianapolis, Indiana:

Mother: "Why do you wish to be a great general like Sherman?"

Willie: "So's I can say things like he did and not get licked."

\* \* \*

They tell me that Gus Albrecht, Jr., who was one of the wheel horses in charge of the arrangements for the entertainment of the delegates and other visitors to the National Retail Hardware Congress at Louisville, Kentucky, had a thermometer stolen from the entrance to his store on Market Street in that thriving village.

The way the story goes, Gus was rather put out about it, and considered asking the Chief of Police, Colonel Petty, to locate the thief, but on second thought he had a placard prepared and posted on one of the windows of his store, bearing the following injunction:

"The thief who stole my thermometer may as well return it to me, for he will have no use for it where he is going. It registers nothing higher than 125 degrees."

\* \* \*

Life is progress—perpetual adaptation to new conditions. The apparent excellence of a result actually attained, the mistakes and errors involved in imperfect efforts to advance to better results, must not be allowed to obscure our view of this truth.—Arthur T. Hadley.



# Jungck Once Carried Seven Makes of Ranges; Now He Sells Only One Kind.

*George W. Jungck, Menomonie, Wisconsin, Tells Why He Decided to Specialize on One Line of Ranges.*

Menomonie, Wisconsin, is a city of about 6,000 people, located in a prosperous farming community and



George W. Jungck.

with several industrial plants of fair size, also a fine college, so it is no wonder that the merchants there enjoy a good business, even in times like these.

Among the most progressive merchants of Menomonie is George W. Jungck, who operates "a small store with a large stock of quality hardware that merits your trade," as he

puts it very aptly in an advertisement

a souvenir postal card which bears an illustration of his store.

This card also quotes a list of well-known lines of various classes of hardware, such as Monarch Malleable Ranges, Wiss Shears and Razors, Iver Johnson's Bicycles, Caldwell Lawn Mowers, etc.

Mr. Jungck is a real hardware man. He knows his goods. He selects the best that he finds and sells it on the basis of its merit and not on price, except that he maintains that at a given price he does give the best possible value.

When we asked Mr. Jungck to tell the subscribers of AMERICAN ARTISAN AND HARDWARE RECORD something about the method he pursues in the promotion of his stove business he made the following statement:

"During the many years in which I have been in the hardware business I have tried out quite a number of different makes of ranges. In fact, at one time seven different manufacturers were represented on our floor, which gave me and my customers an opportunity to judge as to their various points of claimed superiority. But I have settled on just one line now which has them all beat—in quality, appearance and price—the Monarch Malleable Range.

"We started with just one of these ranges in stock, but have increased our sales each year, so that now we buy them by the carload.

"When you are talking 'range' to a prospective customer you must have 'faith' in your line—you must feel that when you sell Mrs. Johnson that range, you are rendering her a real service by inducing her to buy the very best for the purpose that you can procure.

"And that is the way I feel, and the way my salespeople feel: They know and I know, that Monarch is made as well as any range, of the best possible material. That a Monarch has several distinct advantages over any other, such as the vitreous lining which prevents rust to start and accumulate in the 'fire travel.'

"When visiting the Monarch plant at Beaver Dam, Wisconsin, last August, I learned the way the parts were made and put together—right to the finished range. So now I am in position to answer any question that may come up.

"One of the chief reasons for our success with the Monarch is based upon the heavy advertising we do,

### Sealed Bids

will be received on a MONARCH RANGE now showing in window for Thirty Days Only.  
March 19th to April 16th At 4:30 P. M.  
The Highest Bid Will Secure The Range



**Monarch**

Anyone in need of a Range should make their bid. Bidding cards can now be secured at

G. W. Jungck Hardware

### HERE'S YOUR RANGE

QUITE ENOUGH  
20-in. Oven  
\$72.50

Prices on these high grade goods are hard to duplicate, (nothing better), on account of these Ranges being bought in carload lot on 1918 prices.

Here's your chance if you are in need of a RANGE

Monarch Square Range  
Without Reservoir  
**\$72.50**



Geo. W. Jungck Hdw.

### HAVE YOU

set your price on the MONARCH range in our window?



**Monarch**

This MONARCH range will be sold to the highest bidder. Put your bid in the box just inside our door.

HURRY—Contest closes  
SATURDAY, APRIL 16

G. W. Jungck Hardware

both 'on our own hook' and in conjunction with the manufacturers; in newspapers, with circulars and on bill boards. And—we follow up every 'lead' that comes to us.

"In April we had a 'Bid Sale'—the party who made the highest bid, in a sealed box, got the range. The contest closed on April 16th, and we had twenty-seven bidders. The highest offer was a few dollars higher than our regular price. The other twenty-six names are real, live prospects. In fact, we have already sold four more besides five that were sold out, right during the sale.

"My advice to hardware dealers who are figuring on adding stoves to their stock, is to select just one really good range and stick to that. In the long run, you will make more money on your investment.

"To those who have several lines of ranges in stock, my advice is the same: Get rid of all of them except the one that you really feel you can recommend over and above the rest. Sell them at a loss if necessary. Then stick to the one you have selected as the best and go after business on that one with all the vim and vigor you can put into your selling campaign.

"And keep this in mind: Stoves do not sell themselves. You have to hunt out your prospects and keep after them until they come to feel that they can not get along without that range of yours. The old way of waiting for customers to come in and tell you that they want to buy a range is past, never to return, and now we must do some really creative selling if we expect to make any progress.

"Incidentally—that applies to washing machines, refrigerators, kitchen cabinets, tools and lots of other items that bring good profits on the investment if we really work to create the sale."

### ***Calls Attention to Right Use of Color in Window Display.***

Ridicule of advertising managers and of window display managers for their lack of knowledge of color marked the address of Prof. Harry R. Wellman, professor of marketing at Amos Tuck School of Administration and Finance, Dartmouth College, in an address before the lithographic section of the advertising convention held recently in Atlanta, Georgia.

Prof. Wellman spoke not only as a teacher, but as a practical advertising and sales executive. After having won for himself a definite place in the field of business, he took up teaching. As to colors in window displays, he said:

"You look in the windows at the handsome, putty-faced 'ladies' negligently lounging in perfectly good clothes and furniture, urging you to eat, drink or wear this, that or the other, all alike as two peas and all shrieking at you in red—Brick red, cherry red, rose red, maroon red, and plain garden variety red. Why? Because some one once said that red is an arresting color, that it excites interest. It is and it does, but why murder it? Why not figure it—once in a while at least—in terms of sales instead of commotion? I believe more decent design is spoiled by the manufacturer's desire to add red than by any other single means. It is a mania. It breaks out in a rash along with sales contests and other solaces of week-kneed

sales managers whenever sales become a bit difficult."

"When you look over the pages of a magazine," he continued, "and see the peculiar color combinations that manufacturers are purchasing at the price per page of a corner lot, when you look into the store windows and see color the like of which was never displayed on land or sea, you rather wonder about the advantage of color. You do more than that, you frankly doubt it.

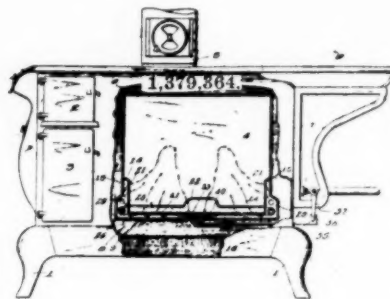
"Probably the chief person to blame for the manufacturer's lack of knowledge is the advertising manager himself. One of the most popular sports of the advertising profession, is panning the manufacturer's lack of knowledge regarding advertising.

"If you have a sense of humor, you will be very patient with the unappreciated heroes, and you will gently but firmly point out to them that it is their fault and not the fault of the manufacturer.

But "the time has come" as the Walrus said, when we must wrap up the spats, park the stick, give the tortoise shells back to the tortoise, resign from the golf club and join the library. We must get down to such facts as are known and establish new facts that will aid in the development of the greatest sales force known, advertising.

### ***Is Granted Patent Rights for Stove or Range.***

United States patent rights have been secured by Fred J. Sass, Peoria, Illinois, assignor to Culter and Proctor Stove Company, Peoria, Illinois, a Corporation of Illinois, under number 1,379,364, for a stove or range described as follows:



In a stove or range, an oven having a supplemental bottom spaced from the main bottom and provided with a plurality of perforations, gas burners on either side of said oven, a gas supply pipe connected

with said burners and provided with a controlling valve, a valve in the main bottom of the oven, an operating means, operating connections between said operating means and said controlling valve in the supply pipe, and between said operating means and said valve in the oven bottom.

It is undeniable that the great quest of humanity is happiness. But was the world created to be happy? How many are truly happy? I've studied people in all classes and conditions, and everywhere I have found, when you get below the surface, that it is mostly the insincere individual who says, "I am happy." Nearly everybody wants something he hasn't got, and as things are constructed, what he wants is money—more money than he has in his pocket.

But, after all, money can buy only a few things. Why should any one envy the captains of industry? Their lives are made up of those vast, incessant worries from which the average individual is happily spared. Worry, worry, that is the evil of life.



# There is Big Money in Catering to Wants of Vacationists and Sportsmen

## Special Effort Made on Lines That Are Used on Outings and for Hunting and Fishing Pays Well

Written for AMERICAN ARTISAN AND HARDWARE RECORD by Jerry Gerlock, Hardware Merchant

When I first saw a hardware store selling sweaters and bathing suits, I thought that the merchant was really going a bit beyond his "legitimate" field, figuring that these items really "belonged" in a clothing or furnishing goods store.

However, the merchant told me that many of his customers for fishing tackle and guns had suggested to

the same applies to some of the lines that should be carried in a good clothing store.

That the people appreciate the value of the accommodation provided by the hardware merchant who has added these "accessory" lines, is proved by the fact that where hardware stores have established such departments and have done the proper promotion work



Figure 1.—Attractive Window Display of Sporting and Outing Equipment. Designed and Arranged by E. Reardon, for W. J. Pettie & Company, Oklahoma City, Oklahoma.

him that they would like to be able to purchase those articles from him, so long as they were buying their other supplies at his store.

So he put in a small stock of such goods as sweaters, hunting coats and caps, wading boots, bowling shoes, skating shoes, bathing suits, baseball suits and shoes—all in their proper seasons—and by proper and consistent advertising attracted considerable additional business, until today he has a regular department for this class of goods which compares in sales and profits very favorably with other stocks in his store.

Some may say that he is cutting into the business of the clothing and shoe stores, but show me the shoe store, for example, in a town of ten thousand population, where a man can find a fair assortment of shoes for the various sports. In most cases, the shoe dealer will tell you that "he will be glad to order a pair for you from the catalogue." And

in the shape of liberal advertising and window display, these lines have always brought added business and prestige as well as profit to the merchant in question.

There are times, of course, when the "Sports and Outing Goods" Department should be pushed harder than at others—and this is one of the periods when special efforts should be made.

Right now many families are going away for their vacations. Many men are taking week end trips to fishing places. All sorts of supplies will be needed for these trips and will be bought at stores which show that they are prepared to fill these needs, so it is strictly "good business" to devote extra space in your newspapers to advertise the lines that you carry.

It is also "good business" to arrange window displays of all sorts of outing supplies and sport accessories.

And the extra money spent and the extra effort made will bear fine returns in the shape of sales which



**Going Fishing Over the Week-End?**

There's no finer outing. See us for the things that will add to its comfort and completeness.

Trout Tackle—the kind that "gets 'em."

"We supply everything but the fish!"

Folding Chairs, Tables, Cots, Griddles—everything in Camp Outfits.

Duckhok Clothing      .22 Rifles

Flashlights              Wading Boots

Fishing Licenses

**CHOWN**

**HARDWARE CO.**

223 Morrison Near First

Figure 2.—Neat Appearing Newspaper Invitation to Buy Supplies for Fishing Trip.



will help to bring your business income up to where it ought to be in order to yield a fair profit at this period which in too many hardware stores is regarded as a regular "dull time."

**Our  
Special Sale  
of  
Outing Clothing  
and  
Outing Boots  
and Shoes**

**is now on**

and offers big reductions  
to reduce our over-stock  
to normal.

Now is the time to make  
your selections in clothes  
and shoes for your sum-  
mer outings.

**HONEYMAN  
Hardware Co.  
Fourth at Alder St.**

Figure 3.—This Newspaper Advertisement Would Have Been More Effective if a Few Prices Had Been Quoted.

In the section to the right, there are golf accessories, sweaters, shoes and gloves, etc.

Each section has a neat show card calling attention to the various lines and emphasizing the completeness of the assortment, as well as to the reasonable prices.

The advertisement shown in Figure 2 is a reproduction of a double column announcement, five inches deep, by the Chown Hardware Company, Portland, Oregon.

This is a very fine looking advertisement, nicely balanced and names the various lines carried in stock. You will note that they cover quite a wide range. If I had prepared the advertisement, however, I would have made it somewhat larger and said something about the prices of some of the items.

In Figure 3 we have a single column advertisement, six inches deep of the Honeyman Hardware Company, also of Portland, Oregon, in which attention is called to a special sale of outing clothing and shoes, offering

I am calling attention here to the window display shown in the accompanying illustration. It was arranged by E. Reardon for W. J. Pettee & Company, Oklahoma City, Oklahoma.

The artist did a good job, and he showed good judgment by separating the different lines by partitions.

In the left third a man's figure is dressed in hunting clothes. With this are shown guns, ammunition, decoys, stuffed birds, scout hatchets and other articles that a man will need when he goes a-hunting.

In the center, we have all sorts of accessories for women who like automobile touring. There are leather and rubber coats, gloves, purses, toilet bags, etc.

big reductions. I am wondering why this concern did not furnish some little proof of these reductions by quoting a few of the special prices. There certainly could be no harm in doing so, for even if Honeyman's were afraid that the specific quotations might cause some of their competitors to undercut these prices, nothing was gained by the omission, because if I were a competitor of theirs and wanted to find out how their prices were, it would be a very easy matter to send a "shopper" to their store and get the information.

On special sale announcements, it seems to me that prices should be one of the prominent features.

**All Aboard for Chicago Hardware  
Retailers' Picnic, Wednesday.**

Wednesday, July 20th, is the great day for Chicago retail hardware dealers, for that is the date for the annual outing and picnic of the Chicago Retail Hardware Association, and members with their families or sweethearts, traveling salesmen and other friends will gather at Evergreen Park, Ninety-fifth Street and Kedzie Avenue, for a full day's sport and fun.

There will be baseball games, running races for adults and children, men and women, and it is expected that some very exciting contests will be witnessed.

For those who do not bring their own "vittels" along, ample provisions have been arranged for lunch and dinner.

Many valuable prizes will be distributed.

William Triesselmann, 3003 Belmont Avenue, is Secretary of the Entertainment Committee, and tickets can be secured from him, at the price of \$1.00 each.

**Patent Office Registration for  
Razor Blades Is Granted.**

A. C. Penn, Incorporated, Newark, New Jersey, and New York City, assignor to The Greist Manufacturing Company, a Corporation of Connecticut, has secured United States Patent Office registration, under number 141,797, for the trade-mark herewith reproduced. The particular description of goods to which it applies is razor blades.

**PENN**  
141,797  
**DOUBLE  
BEVEL  
BLADES**

**Now It Is United States Senator  
T. Coleman DuPont.**

General T. Coleman DuPont, until 1915 president of the E. I. DuPont de Nemours Company, Wilmington, Delaware, and at one time president of the Central Coal & Iron Company in Kentucky, recently was appointed United States Senator from Delaware, succeeding Josiah O. Wolcott, resigned.

Remember your old customers first. When conditions are such that it comes to choosing between your old customers and the new ones that you want to make sure of, supply the old ones first. When the new ones see that such is your policy, they will understand that if they become steady customers they will get the same faithful services.

# Good Ideas for Window Display

*Practical Lessons from Exhibits in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition. How to Get More Passers-By to Come into Your Store.*

## **WINDOW DISPLAY THAT SOLD MANY BATHING SUITS.**

Some hardware dealers may not agree with us that a hardware store should sell bathing suits and kindred merchandise.

But surely, if a drug or cigar or dry goods store is the proper place to buy safety razors—and judging by the actions of certain manufacturers—it is, why should a bathing suit be out of place in a hardware store?

As a matter of fact, there is no good reason why a hardware merchant should not place himself in posi-

Chicago which can rightly boast of such handsome window displays as are a regular feature of this Company's campaign for business.

As will be noted, the scheme of the display is very simple, and there is no attempt toward crowding in a lot of goods, and as a result everything stands out and with very pleasing effect. A table, a chair, folding a screen and a few display stands comprise all the fixtures used, and upon these are draped bathing suits, sweaters, slippers, trunks and kindred items.

A life preserver, a couple of oars, a detachable "floor" for a canoe, lend tone to the arrangement, colors in



Attractive Window Display of Accessories for Bathers, Designed and Arranged by M. E. Klasky for the Kelley-Duluth Company, Duluth, Minnesota.

tion to care for all the wants of a man who goes on an outing or vacation trip, such as bathing suits, sports wear, of all sorts, provided, of course, that he can sell enough of this class of merchandise to justify him in putting in a stock, and also provided that he will prepare himself to render at least as efficient service as any other store that might handle such goods.

The Kelley-Duluth Company, Duluth, Minnesota, operates a real "hardware department store." In their place of business is one of the most progressive hardware stores in the country and their show windows and other means of advertising will compare more than favorably with those of most any store in the largest cities of the country. There is not a hardware store in

plenty being provided by the garments themselves.

In the background, there will be noticed a case of shot guns and rifles.

Two large show cards in the foreground call attention to the offerings of the Outing and Sports Department.

Altogether, it is very dignified and handsome window display, and the artist, Mr. M. E. Klasky, has every reason to feel proud over his work.

"Those who wish for self-advancement should remember that the art in life is not so much to do a thing well as to get a thing that has been moderately well done largely talked about."—Sir Arthur Helps.



## *How Huber Sold Over \$60,000 Worth of Hardware in Town with Less Than Two Hundred Population.*

*Regular, Consistent, Personal Advertising and Complete Knowledge of Important Business Facts Made His Success.*

In the northwestern part of Iowa, there is a little town named Larrabee. Its population is less than two hundred men, women and children. Eight miles to the southeast is Cherokee, a city of 5,000 people. Thirty miles to the northwest is Sheldon with 3,000 inhabitants. Forty miles to the west is LeMars, with a population of 4,500.

It is a question, however, whether any retail hardware dealer in any of the three last named cities does as much business as F. C. Huber who operates a hardware store in Larrabee, and whose sales in 1920 ran well over \$60,000.

Huber's Farm Equipment Store didn't "just grow" like Topsy of Uncle Tom's Cabin fame. It was developed by much hard work, combined with a lot of good sense and a keen insight into human nature.

Mr. Huber doesn't believe in the theory that "people will buy only when they get good and ready," nor does he believe that his business is materially different, as to conditions, from that of most other hardware dealers, nor does he feel that the people around Larrabee do not read advertisements, nor that they will not come to his store when he offers them an opportunity to buy something that they can use to advantage.

On the contrary, he knows that a farmer in the vicinity of Larrabee is just the same sort of man as the farmers near Danville, Illinois, or Dayton, Ohio, or Bismarck, North Dakota; that they need shovels, plows, axes, buckets, blankets, cream separators, and all sorts of tools and equipment; that their women folk want washing machines which will save them from back-breaking labor; that these same women folk like a good kitchen range and all sorts of utensils for their kitchens and laundries.

And so he sends out advertisements to a large mailing list which is kept thoroughly up to date. These advertisements are published at frequent and regular intervals and in each one of them there is a very distinct element of the personal relationship which Mr. Huber has established with the people in his community.

He doesn't talk to strangers in his advertising matter. One notices right away that he acts on the principle that he has the confidence of his trade, and when you stop to consider—this is really the only foundation upon which a truly successful business can be built and maintained.

At appropriate times he gives out souvenirs or gifts of real value, but he always makes the people come to his store, and for this purpose he sends them a notice on which he asks them to check off such articles for which they expect to be in the market within the near future. When Mr. Farmer or Mrs. Farmer calls for the souvenir the notice is carefully filed away after the "expectations" have been tabulated.

These tabulations not only serve as "leads" for fu-

ture business, but also as a guide for purchases, so that Mr. Huber is not in danger of buying too much of any of these larger items, such as stoves, washing machines, separators, etc. Incidentally, it is worth mentioning that inside of three months, sales of over \$10,000 were directly due to one of these souvenir notices.

Whenever a boy or a girl in the vicinity has a birthday, some little present is sent to such a buyer-to-be, and there is no doubt that this custom has made a large number of boosters for Huber's Farm Equipment Store. He keeps track of them by means of a card file, the beginning of which was made by the help of the assessors who, of course, were paid for their service.

Even his business stationery shows that Mr. Huber values the personal relationship very highly. At the top of his letterheads, his name is in one corner as owner, while in the other corner appear the names of his two salesmen, D. D. Tilton and R. C. Carnahan, "Assistants."

In addition to these two men, a bookkeeper-stenographer is employed, and the stock is thoroughly departmentized—hardware, harness, stoves, pumps, oils, paints and grease, implements, fixtures. Accounts are kept of the sales in each department, as well as of the sales of each of the selling force, Mr. Huber included.

A considerable share of the business in a community like this must, of course, be on a credit basis, and for this purpose a Credit Account System of the most modern design is utilized, so that with very little work it is possible to ascertain how much money is outstanding, as well as the amount owed by any one customer, the latter always showing as the last entry on the charge sheet.

But Mr. Huber does not stop here. He has his bookkeeper condense a report of each day's business every morning, this particular work being done in less than half an hour by the use of an adding machine. This report gives him an analysis of the previous day's business, which includes cash sales in each of the six departments, charge sales in the same manner and the total of both; the cost of the goods sold; the gross profit; expense incurred; and the net profit.

Furthermore, this report shows the exact amounts of accounts receivable and payable; cash on hand and in bank; and value of stock on hand in each department. In addition, corresponding figures are also shown for the preceding day and for the same day of the previous year.

Mr. Huber has confidence in his banker and the latter has confidence in him, because when he makes his deposit each day, a copy of this report is filed, too, and after examination by the banker is placed in the vault of the bank.

Two objects are gained thereby:



When a loan is made necessary in order to take advantage of a liberal discount for cash, Mr. Huber doesn't have to prepare a special statement of his business; the banker knows all there is to know, and the loan is quickly arranged.

In the second place, if a fire should destroy his store and his office records, the statements furnished daily to the bank will enable him to settle with the insurance

companies without any dispute or undue delay.

On the accompanying illustration is shown one of these daily statements, at the bottom, with a monthly summary at the top. To the right in the latter is an itemized list of the expenses for the month, the total of which is then subtracted from the gross profit, and to this amount is added the sum of the discounts taken during the month, the result being the net profit.

# Huber's Farm Equipment Store, Larrabee, Iowa

Monthly Summary, \_\_\_\_\_ 191\_\_

Total Cash Sales - -		3500 00			Itemized Expense Account	
Total Cash Sales Cost		2750 00			Salaries	340 00
Total Cash Sales Profit - -			750 00		Advertising	100 00
Total Credit Sales - -		1400 00			Drayage Exp.	5 00
Total Credit Sales Cost		1050 00			Stationery	25 00
Total Credit Sales Profit - -			350 00		Fuel	45 00
Total Sales - - -		4900 00			Postage	10 00
Total Sales Cost - - -		3800 00			Rent	40 00
Gross Profit on Total Sales			1100 00		Light	15 00
Gross Profit for Month -		1600 00			Misc	20 00
Disc on Purchases		75 00	1675 00			
Total Expense for Month -			600 00			
Net Gain for Month			1075 00			

This Monthly Summary, to the left, shows total of sales; total cost of cash sales; total credit sales; total cost of credit sales; total gross profit; total discounts; total and itemized expenses; and net gain for the month.

## Huber's Farm Equipment Store, Larrabee, Iowa.

Daily report for

191\_\_

Received on Book Account for Month	750 00
Amount Merchandise Purchased for Month	1000 00
Gross Profit	180 00
" "	125 00
" "	15 00
" "	10 00
" "	20 00
" "	145 00

2519.50  
445.00  
150.00  
189.00  
76.00  
4295.00  
5000.00  
8174.50\*

DEPT.	Cash	SALES Charge	Total	Cost of Goods Sold	Gross Profit	Expenses	Net Profit
Hardware, 1	25 00	1 00	26 00	20 50	5 50		
Harness, 2	30 00	6 00	36 00	25 00	11 00		
Stoves, 3	75 00	60 00	135 00	50 00	85 00		
Pumps, 4	5 00	10 00	15 00	4 00	11 00		
Oils-Grease, 5	10 00	7 00	17 00	1 00	16 00		
Implements, 6	200 00	200 00	400 00	150 00	250 00		
Total	345 00	279 00	624 00	480 50	143 50	73 50	170 00

### CUSTOMER'S ACCOUNTS

### CREDITOR'S ACCOUNTS

Customer's Accounts, previous rep't	750 00	Creditor's Accounts, previous rep't	600 00
Charge Sales Today	279 00	Purchases on Account	750 00
Total	1029 00	Total	850 00
Less Received on Account	300 00	Less Paid on Invoices	275 00
Net Customer's Accounts	729 00	Net Creditor's Accounts	575 00

### DEPARTMENT INVENTORY

	Hardware, 1	Harness, 2	Stoves, 3	Pumps, 4	Oils-Grease, 5	Implements, 6	Pictures Tools
Prev. Inventory	2500 00	475 00	700 00	175 00	75 00	4500 00	500 00
Purchases today	40 00	50 00	60 00	25 00	10 00	95 00	
Total	2540 00	525 00	760 00	200 00	85 00	4595 00	
Cost of Goods sold today	20 50	30 00	110 00	11 00	9 00	300 00	
Present Inventory	2519 50	495 00	650 00	189 00	76 00	4295 00	500 00

### CASH

### TOTAL INVENTORY

Previous Cash Bal	1000 00	Previous Inventory	8375 00
Cash Sales Today	345 00	Purchases Today	750 00
Received on Account	300 00	Total	865 00
Total	1645 00	Cost of Goods Sold Today	480 50
Paid from Cash Till	68 50	Present Inventory	8174 50
Paid by Check	700 00		
Total Payments	318 50	Gross Sales Today	624 00
Cash Balance	1326 50	Gross Sales Year Ago	412 00

The Daily Report, to the right, shows itemized sales for each of the six departments, both cash and credit; cost of goods sold; gross profit; expenses and net gain for the day. Also inventory by departments

Forms Used by Huber's Farm Equipment Store, Showing Daily Receipts, Amounts of Expenses and Purchases as Well as Monthly Summary of the Same Items.

### **Apples and Zinc Mix Too Well for Comfort, Says Willis.**

TO AMERICAN ARTISAN AND HARDWARE RECORD:

The writer was much interested in the article on page 24 of your July 9th issue, entitled "Galvanized Vessels are not Necessarily Dangerous as Containers for Food."

In 1868 I was working for Grove & Whitney in Lansing, Michigan, and at the Boys' Reform School which was located there, their sauce kettle, holding about one barrel, gave out and the custodian came to our shop for a new one, which we made from 18 gauge galvanized iron, using muriatic acid as a flux for soldering. It was delivered on Saturday, well washed and cleaned; then put in use.

As the boys, nearly nine hundred of them, had not had sauce for a week or more, they ate heartily of it, and before ten o'clock that night every physician and nurse in the two cities was called into service. I was called to tell what the galvanizing and flux was I had used. It was pronounced zinc poisoning, released by the action of the acid in the apples, zinc being the principal metal used in galvanizing.

Only the boys acting as waiters and those in the hospital escaped.

There were no deaths from the poisoning, but some of the boys were in bed for a week or more.

No galvanized vessels for food or drink of any kind for me, and lead is just as bad.

Yours truly,

K. I. WILLIS,

President, Willis & Sons Company.

Moline, Illinois, July 12, 1921.

### **Trade Opportunities in Foreign Lands.**

The Bureau of Foreign and Domestic Commerce through its Special Agents, Consular Officers and Commercial Attachés, is receiving information of opportunities to sell hardware and kindred lines in several foreign countries. Names and locations will be supplied on request to the Bureau in Washington or its District Offices. Such requests should be made on separate sheets for each opportunity, stating the number as given herewith:

35134.—A commercial agent in the United States who is about to leave the Far East desires to secure the representation of firms for the sale of agricultural implements, tools, machinery, engines, hardware, chemical products, oil, bicycles, etc.

35135.—A firm in Canada desires to purchase metallic shingles or siding. Full particulars are requested as to size of shingles and siding manufactured, as well as prices and terms. Quotations should be given f. o. b. port of shipment.

35143.—A merchant in British West Indies desires to get in touch with manufacturers of galvanized ware, motor cycles, automobiles, paper goods, etc. He prefers to buy on consignment or credit for a period of three months, but is prepared in exceptional cases to advance two-thirds cash with order or on delivery. No reference offered.

35152.—A commercial agency firm in Victoria, Australia, desires to secure an agency for the sale of tools. References.

### **Coming Conventions.**

Sheet Metal Contractors' Association of Ohio, Hotel Gibbons, Dayton, Ohio, July 19, 20, and 21, 1920. William I. Kaiser, Secretary, 123 East Chestnut Street, Columbus, Ohio.

Michigan Sheet Metal Contractors' Association Annual Outing, Grand Rapids, Michigan, July 29 and 30, 1921. Frank

E. Ederle, Secretary, 1121 Franklin street, S. E., Grand Rapids, Michigan.

The Western Retail Implement, Vehicle and Hardware Association, Kansas City, Missouri, January 17, 18, 19, 1922. Exhibition at Convention Hall in charge of Louis W. Shouse. Headquarters, Coates House. Sessions in Century Theatre. H. J. Hodge, Secretary, Abilene, Kansas.

Pacific Northwest Hardware and Implement Association Convention, Davenport Hotel, Spokane, Washington, January 17, 18, 19, 20, 1922. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Oregon Retail Hardware and Implement Dealers' Association Convention, Imperial Hotel, Portland, January 24, 25, 26, 27, 1922. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Kentucky Hardware and Implement Association, Jefferson County Armory, Louisville, Kentucky, January 24, 25, 26, and 27, 1922. J. M. Stone, Secretary-Treasurer, Sturgis, Kentucky.

Indiana Retail Hardware Association, Convention and Exhibition, Athenaeum Hall, Indianapolis, January 24, 25, 26, 27, 1922. G. F. Sheely, Secretary, Argos.

West Virginia Hardware Association Convention and Exhibition, Wheeling, January 31, February 1, 2, 1922. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Nebraska Retail Hardware Association Convention, Lincoln, February 7, 8, 9, 10, 1922. George D. Dietz, Secretary, 414-417 Little Building, Lincoln, Nebraska.

Michigan Retail Hardware Association Convention and Exhibit, Grand Rapids, Michigan, February 7, 8, 9 and 10, 1922. Karl S. Judson, Exhibit Manager, 248 Morris Avenue, Grand Rapids, Michigan. A. J. Scott, Secretary, Marine City, Michigan.

Wisconsin Retail Hardware Association Convention and Exhibition, Milwaukee, February 8, 9, 10, 1922. P. J. Jacobs, Secretary, Stevens Point, Wisconsin.

Pennsylvania and Atlantic Seaboard Hardware Association, Inc., Convention and Exhibition, Philadelphia Commercial Museum, Philadelphia, February 13, 14, 15, 16, 17, 1922. Sharon E. Jones, Secretary, 1314 Fulton Building, Pittsburgh.

Illinois Retail Hardware Association Convention, Hotel Sherman, Chicago, February 14, 15, 16, 1922. Leon D. Nish, Secretary, Elgin, Illinois.

Minnesota Retail Hardware Association Convention, St. Paul, February 14, 15, 16, 17, 1922. H. O. Roberts, Secretary, 1030 Metropolitan Life Building, Minneapolis, Minnesota.

Ohio, Hardware Association Convention and Exhibition, Columbus, February 14, 15, 16, 17, 1922. Headquarters, Deshler Hotel. Exhibition, Memorial Hall. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Missouri Retail Hardware Association Convention and Exhibition, St. Louis, Planters Hotel, February 21, 22, 23, 1922. F. X. Becherer, Secretary, 5106 North Broadway, St. Louis, Missouri.

New England Hardware Dealers' Association Convention and Exhibition, Paul Revere Hall, Mechanics' Building, Boston, Massachusetts, February 21, 22, 23, 1922. George A. Fiel, Secretary, 10 High Street, Boston.

New York State Retail Hardware Association Convention and Exhibition, Rochester, February 21, 22, 23, 24, 1922. Exhibition at Exposition Park. Headquarters and sessions at Powers Hotel. J. B. Foley, Secretary, 412-413 City Bank Building, Syracuse, New York.

Hardware Association of the Carolinas Convention, Winston-Salem, North Carolina, May 9, 10, 11, 1922. T. W. Dixon, Secretary-Treasurer, Charlotte, North Carolina.

### **Retail Hardware Doings.**

#### **Illinois.**

C. Bayne and George L. Ewing have purchased the hardware store at the corner of 119th Street and Wentworth Avenue, Chicago, from John Cinak, and will conduct the business under the firm name of Bayne and Ewing.

The Burgess Hardware Store of Burgess has been sold by Detwiler Brothers of Aledo to George Jones and Sons of Lanesboro, Iowa.

Stauffer and Oitker of Barry have sold their hardware stock to Frank Lawson. The new name of the concern is the Lawson Hardware Company.

#### **Indiana.**

U. J. Shumaker has purchased a half interest in a leading hardware firm at Lebanon.

#### **Wisconsin.**

The Weller Hardware Company has started in business at 1004 Division Street, Stevens Point.

E. C. Hickinbotham is selling out his hardware stock at Hortonville.



# Advertising Help and Comment

**Send Us Copies of Your Advertisements. Let Us Help You Get Bigger Results by Advice and Suggestions. The Service Is Free. Don't Hesitate to Take Advantage of It.**

A noteworthy characteristic of all the advertisements published by Brinsmaid's is their artistic type selection and arrangement.

The accompanying illustration

The general impression created by this kind of typography in advertising is one of refinement and the kind of sincerity which always accompanies dependable quality.

advertisement to your local newspaper, insist that it be set up neatly and artistically and not full of shrieking display type.

\* \* \*

The original of the T. B. Rayl Company advertisement, produced herewith from the *Detroit News*, Detroit, Michigan, took up a space of 6 x 10½ inches.

Its type, therefore, was amply large enough for easy reading, and the ratio of white space throughout

**BRINSMAID'S**

## Readjustment Sale of HOUSEWARES

Every day brings new "bargains"—here are a few of the opportunities for tomorrow

**NEW JAPANESE BOWLS FOR BULBS and FLOWERS**

1.50  
2.50  
3.00  
4.00

These popular bowls have just arrived in time for the planting of bulbs for Easter blooming, and come in attractive shades of yellow, rose, violet, bright blue and dull blue, in four sizes.

**Imported China Cups and Saucers**

Fine plain white Nippon China; regular price 4.50 a dozen.

1.69 Set of Six



**\$5 Aluminum Dish Pans 3.48**



These are 12-quart size, highly polished, and have strong handles. 21-quart size, \$5 value, at \$3.98.

**\$2 Preserving Kettles at 1.49**

Pure aluminum, 4 quart size, highly polished, strong wire bail with ebonized handle.

6 quart size, regular \$2.50 value, special at \$1.69.

8 quart size, regular special at \$1.98.

10 quart size, regular \$3.50 value, special at \$2.29.

**\$6 Aluminum Tea Kettles 3.48**



Substantially constructed of pure aluminum, seven quart capacity.

**Galvanized Wash Tubs**

1.50 No. 1 tubs, 08c

2.00 No. 2 tubs, 1.10

2.25 No. 3 tubs, 1.30



**65c Pudding Pans 38c**

Pure aluminum, 1 quart size, deep shape, highly polished. \$1.00 pudding pans, 65c.

**70c Wash Boards 44c**



Selected hardwood frame, soap saving drain board head, zinc rubbing surface, the most serviceable board on the market.

**Galvanized Water Pails**

60c 10-qt. pails 29c

65c 12-qt. pails 34c

75c 14-qt. pails 39c



**Galvanized Oil Cans**

65c 1-gal. cans 48c

1.00 2-gal. cans 78c

1.50 3-gal. cans 98c

2.00 5-gal. cans 1.38

**2.75 Covered Kettles 1.78**



Pure aluminum, 4-quart size, aluminum cover, highly polished.

**Very Special Groups of Aluminum 10c EACH**

Tea Strainers

Coffee Strainers

Egg Separators

Coffee Balls

Tea Balls

Cake Turners

Dippers

Ladles

Sugar Shakers

Salt and Pepper Shakers

Lemon Juice Extractors

Cookie and Doughnut Cutters

Measuring Spoon Sets

Collapsible Cups

Napkin Rings

Measuring Cups

Scoops

Trays

Child's Cups

shows one of the Brinsmaid's advertisements which appeared in the *Des Moines Capital*, Des Moines, Iowa.

The type is of the kind which is easy to read and there is no over-emphasis anywhere in the layout.

In fact, it is hard to be sincere when quality is lacking. Hardware dealers are advised to put this advertisement in their files as a sample of good advertising writing and desirable type selection.

When you take your copy of your

**Record-Breaking Bargains  
"At Rayl's"**

The values listed below are a few of the many items on sale and it's all "Rayl's" dependable merchandise.

<p><b>Roller Skates</b></p>  <p><b>Barney &amp; Berry's</b></p> <p>that famous "cat" automatic shoe cleaner</p> <p><b>\$1.95</b></p>	<p><b>Gillette Blades</b></p> <p>50c Doz.</p> <p><b>Gillette Razors, with 6 Blades, in Khaki Case</b></p> <p><b>\$1.00</b></p>	<p><b>Star Hair Clipper</b></p> <p><b>\$1.98</b></p> <p><b>"Get Up" THE SENTINEL</b></p> <p>Alarm Clock—metal sound—can be set for any hour—range 1-12</p> <p><b>\$1.69</b></p>	<p><b>For Your Garden</b></p> <p>10 Hands Garden and 17" of gold handle and Rayl's low price</p> <p><b>95c</b></p> <p><b>Bureau Planning Cards, 24c Pack</b></p>
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**For the Kiddie**

A small one

Valuable for the kiddie, and Rayl's low price is

**\$2.65**

**For the Boy**

The Standard Cycle "Super-Builder" bike, with new chain, and Rayl's low price is

**\$5.99**

**The Wonderful Bargains On Wear-Ever Aluminum Ware**

Large size Roaster, \$9.90 value, for \$6.49

Large size Soupful Lin Soups Pan, \$3.75 value, for \$2.79

Large size Double Boiler, \$3.10 value, for \$2.29

8-in. Frypan Pan, \$2.30 value, for \$1.59

4-quart Roast Kettle with Cover, \$1.40 value, for \$1.09

4-quart Pudding Pan, 5-quart, \$2.50 value, for \$1.84

Coffee Pot, 4-qt., \$2.50 value, for \$1.89

Tea Pot, 1 qt., \$2.50 value, for \$1.89

**Did Your Lawn of Dandelions**

You can do it with this special Dandelion Root Extract—digs out the root and dandelion and plants and prevents them from growing. It's \$1.32 a quart.

**BATH ROOM FIXTURES**

White Bathroom Sinks, \$1.40 value, for \$1.09

White Toilet, Bath Stoppers, etc., for \$1.00

White Toilet Tissue Holders, etc., for \$1.00

White Bathroom Shampoos, 15c value, for \$1.00

T. B. RAYL CO.

9 E. Grand River, at Woodward

This Sale Closes Saturday, April 30, at 6 P. M.

the various divisions of the layout was sufficient for the emphasis of contrast.

The illustrations were so placed as to give variety without confusing the eye.

Every article mentioned has its price quoted in bold, unmistakable figures.

This feature of the copy gives it pulling power and it produces confidence in the mind of the prospective buyer.

\* \* \*

Whatever feature of an advertisement which shunts the thoughts of the reader off the main track of its message lowers the selling value of the copy.



## *Hussie Takes Norris to Task on Resolution Passed at Cleveland Convention.*

*Says Issue Is Drawn Sharply Between Warm Air Furnace Manufacturers and Installers.*

John H. Hussie, Secretary of the Western Warm Air Furnace and Supply Association and Director of the National Association of Sheet Metal Contractors, does not agree with Edward Norris, President of the Utica Heater Company, Utica, New York, and Chairman of the Legislative Committee of the National Warm Air Heating and Ventilating Association, as to the means that should be taken to accomplish the much needed improvement in the warm air heating and ventilating field, and in the following letter calls attention to some of the features of the resolution passed at the Cleveland Convention of the latter Association, which, according to his thinking, are not for the best interests of the trade in general.

Mr. Hussie's letter which is in reply to one from Mr. Norris which was published on page 22 of the July 2nd issue of AMERICAN ARTISAN AND HARDWARE RECORD follows:

TO AMERICAN ARTISAN AND HARDWARE RECORD:

Replying to the article by Mr. Edward Norris, published in your issue of July 2nd, I desire to say that I welcome a full and free discussion on this subject, as I believe the furnace installers of the country are much interested and also that they are entitled to know the facts and the view from all sides of the question.

Mr. Norris objects to my quotation, "Words are given us to conceal our thoughts." I still believe the criticism justified.

He seems to think the resolution very "clear cut." Well, you know we are all partial to our own children, but I see it differently. Why, for instance, does the resolution imply that someone is attempting the passage of a law that discriminates between different types of heaters or attempts to check invention? Why does it intimate that anyone has asked for "inspection of each installation by states"?

The writer surely knew this to be untrue, and to my knowledge, many reading this resolution thought that the law proposed by the National Association of Sheet Metal Contractors and the Western Warm Air Furnace & Supply Association proposed these things.

Is the resolution then so "clear cut"?

The resolution further declares that the Association approves of a law regulating installation, but in the next paragraph declares against the clause that would restrict furnace installations to competent men, thus knowingly so emasculating the law as to make it impotent and inoperative.

Why juggle with words, men? Let us all line up under one flag or the other. I confess that I am on the side of the honest, competent retail furnace dealer who maintains a shop with an overhead and all kindred troubles and expense and against the itinerant seller of furnaces who is a constant thorn in the flesh of the honest merchant. Mere words, no matter how

"clear cut," will not satisfy the retail dealers. Action is what counts, not resolutions.

"Ye proof of ye pudding lieth in ye eating thereof, and not in ye chewing of ye pudding bag its string." There's another good old quotation for the consideration of the writer of this resolution.

Mr. Norris says he is pleased with the action of the National Association of Sheet Metal Contractors at Pittsburgh. I was pleased also, because the president, in his annual address, showed that he is on the side of the furnace retailer and also because the resolution passed by the Pittsburgh Convention *absolutely declared for a law to compel furnace installers to stand an examination.*

Mr. Norris says further, that we need the Society of Heating and Ventilating Engineers. Well, perhaps we do. I'm perfectly willing, but I call attention to the fact that the patient has been ill for many years and I am wondering where in all of that time this much needed doctor has been. We know whether we want licensed installers or not, don't we? That's really all of the issue. So far as specifications are concerned, that part can wait but I repeat, large manufacturers in business for thirty to fifty years should blush to admit that they can not yet write a formula for proper installation of a furnace.

Mr. Norris speaks of "hurriedly and carelessly drawn measures." What measure does he mean? Does he not know that the measure proposed last winter was the result of an entire year's work by the joint committee of the National Association of Sheet Metal Contractors and the Western Warm Air Furnace and Supply Association, and that it was founded largely on laws that have been in operation in several states for many years? Yes, he does know it. This is another example of the straw man set up to knock over.

Mr. Norris says that I have "Unfortunately seen fit to impugn the motives of furnace manufacturers." I deny this absolutely. "Impugning" is absolutely foreign to my nature. It would be silly to place furnace manufacturers all in one class, and the proposed law has many friends among manufacturers. I do not "impugn" but directly attack the methods of certain manufacturers who at the time the bill in question was before the Nebraska legislature, resorted to manifestly unfair methods to defeat it.

Here is a sample. One large manufacturer wrote thus to his customers:

"National Warm Air Heating and Ventilating Association strongly opposed to this code."

Now, Sir, the National Association had, at that time, never passed upon this code and several of its members were out working hard for the code at this very time. By what right, therefore, did this manufacturer presume to speak for the entire Association? He had just one vote and had no more right to speak for the Asso-

ciation than I had. This is just a sample of methods used, not by the Association, but by certain individuals.

The issue is simply this: Should an installer take an examination to show his fitness or not?

As it is now, a man must have a license to sell you poison, but without any license, he can install in your home a poison breathing, germ spreading apparatus and call it a furnace.

Is it any wonder architects refuse to recommend furnaces?

Let it be understood that I have no selfish interest in this, whatever. In fact the passage of such a law would result in financial loss to me just now, but I sincerely trust that I am not altogether selfish and can hope disinterestedly for the future of the heating industry.

The issue is clearly drawn between the resolution published in the July 2nd issue of AMERICAN ARTISAN AND HARDWARE RECORD, and the resolution adopted at Pittsburgh by the National Association of Sheet Metal Contractors.

The latter has always stood ready to work with all others. It's the manufacturers' committee that has been holding back, so it is to be hoped now that the time for promising is passed and that we will see some action.

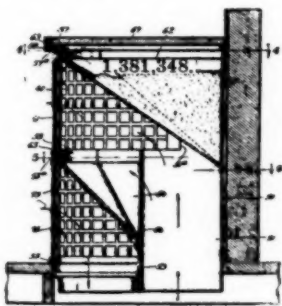
Yours very truly,

JOHN H. HUSSIE.

Omaha, Nebraska, July 9, 1921.

### **Combined Warm Air and Cold Air Register Patent Is Assigned.**

Albert G. Scherer, Chicago, Illinois, assignor to The Excelsior Steel Furnace Company, Chicago, Illinois, a Corporation of Illinois, has been granted United States patent rights under number 1,381,348, for a combined warm air and cold air register patent described in the following:



A register comprising a box-like structure the rear wall and portions of the side-walls whereof are each formed of two plates spaced apart to provide an intermediate air-space, a reticulated plate forming the front wall and remaining portions of said side-walls, a vertical plate connecting the outer portions of the double side-walls, a

pyramidal deflector extending from said partition to said reticulated plate intermediate the top and bottom thereof, and a pyramidal deflector extending from the double rear wall to the top of said reticulated plate.

### **Keith Furnace Company Will Build New Plant.**

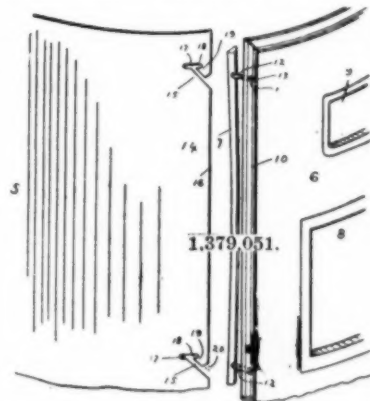
The Keith Furnace Company, Des Moines, Iowa, manufacturers and distributors of warm air furnaces and supplies, is to have a new home at Twenty-sixth Street and Dean Avenues in that city. For twenty-six years the concern has been located at 336 South West Eleventh Street.

A new plant, to cost approximately \$150,000, will occupy almost an acre of ground. The set of buildings will be constructed of brick and glass. A novel feature of the plans provides for a park, 98 feet long and 80 feet wide, at the corner of Twenty-sixth Street and Dean Avenue. The plant will be equipped with modern machinery. Another feature is a recreation room for the employees.

Reuben S. Keith, President of the Company, states that two units of the big plant will probably be constructed this year.

### **Obtains Patent for Heater Casing Construction.**

Under number 1,379,051, United States patent rights have been granted to Jacob J. Seemann, Utica, New York, assignor to Utica Heater Company, Utica, New York, a Corporation of New York, for a heater casing construction described herewith:

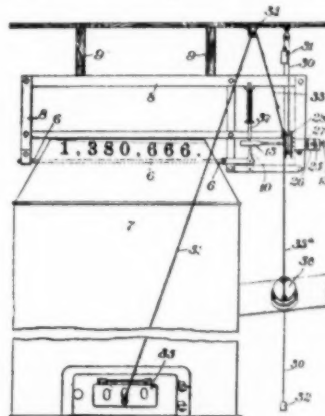


In a heater casing construction the combination of a panel front having its side edges provided at intervals with bolt-receiving apertures, a rod at the rear of each side edge of said panel front, bolts extending loosely through said apertures in the

panel front and in adjustable engagement with said rods and a casing having its opposite ends overlapping the side edges of the panel front, said ends of the casing being provided with a plurality of slots extending in from the edge of said ends in a slanting direction and terminating with an enlargement substantially at right angles with said end edges, the ends of the casing being located between the side edges of the panel front and said rods with the bolts extending through said enlargements.

### **Patents Draft Regulator for Furnaces.**

Under number 1,380,666, United States patent rights have been granted to Robert McCann, Columbus, Ohio, for a draft regulator for furnaces described herewith:



In means for regulating the temperature of a furnace or the like having a draft controlling device, the combination of a thermostatic bar, a stop block operated by said thermostatic bar, a rotary bladed member arranged to be released and arrested by said stop block and means for driving said bladed

member and operating the draft controlling device.



## Ventilation—Its Place and Necessity in Public Buildings.

*Excerpts from Excellent Paper Prepared by David M. Haines, Chicago, for Trade Development Committee of National Association of Sheet Metal Contractors.*

During the session devoted to the work of the Trade Development Committee of the National Association of Sheet Metal Contractors at their recent Convention in Pittsburgh, David M. Haines, of the Haines Company, 1933 West Lake Street, Chicago, read a very instructive paper on "Ventilation—Its Place and Necessity in Public Buildings," from which the following excerpts are taken:

"Before we can intelligently discuss the necessity for ventilation in modern buildings, it is, I believe, necessary that we have a clear and comprehensive understanding of what the term ventilation means at the present time. It is best to start with a definition, and I will give you first the one used, I believe, by Billings a generation ago: 'Ventilation is the art of removing foul air and introducing fresh air for breathing purposes into occupied rooms.'

"I mention this definition only to contrast it with another one proposed by Dr. E. Vernon Hill, the aerologist. Dr. Hill's definition is as follows: 'Ventilation is the science of producing and maintaining the proper temperature and humidity in occupied rooms by means of an adequate, equally distributed supply of clean air.'

"The marked contrast in the two definitions I have given you illustrates the changes that have occurred in our ideas regarding the subject of ventilation from the time of Billings to the present. The old conception was that ventilation consisted in supplying outdoor air for breathing purposes. It was generally assumed that all outdoor air was clean, healthful, and in every way desirable, and that all air inside the building was foul and dangerous.

"I will not take your time to discuss the researches on this subject by scientists in this country and abroad but will direct your attention to the fact that in the past twenty years our views regarding ventilation have undergone marked changes. We do not talk so much about fresh air and foul air because we realize that the importance of these factors is almost negligible. Allow me to illustrate: If a man faints in a crowded, poorly ventilated room, the cry is 'stand back, give him fresh air.' Some helpful individual usually loosens the garments at his throat, fans him, and perhaps sprinkles water on his face. The result is the man soon regains consciousness, but the man did not faint for lack of air and he does not recover because more air is supplied; it is not a question of air at all; it is entirely a matter of heat. In the poorly ventilated room the temperature or humidity, or possibly both, becomes so high that the human body does not give off the excess heat generated and the man faints from what the physician calls 'heat prostration' and when we loosen his clothing, fan him, and sprinkle water in his face, we aid nature, not in giving him more air but in reducing his

body temperature, thus hastening his return to consciousness.

"We are forced to realize at the present time the great importance of maintaining the proper temperature in occupied rooms, and also the importance of a desirable humidity for that temperature. It is for this reason that the definition of Dr. Hill's, the importance of proper temperatures and humidities, is emphasized by making them the principal features.

"It must not be understood for a moment that the necessity for an adequate supply of clean air has been reduced, for such is not the case, in fact our new conception makes it absolutely essential, but a ventilating system that has only for its purpose an abundant air supply will fall far short of its usefulness.

"Furthermore, the air must be clean. Dust is considered at the present time something more than a mere nuisance. Dust is irritating to the sensitive tissues of the body, it carries bacteria of all kinds and is a positive menace to health. All outdoor air is not equally desirable. That in the country districts is usually clean but in the towns and cities it is usually imperative to clean the air supply with a properly designed washer.

"In ventilation practice of a generation ago, or even less, the important parts were the fan and the tempering coils. Air washers, humidifiers, automatic temperature and humidity control were considered as accessories or refinements that were not really necessary and only to be used where price was not an object.

"Today we recognize air cleaning, humidification, temperature, and humidity control as necessary parts of every good equipment. You see then that the marked changes in our ideas regarding ventilation are not revolutionary, but the importance of the various factors involved in the problem has shifted, particularly with reference to the temperature and humidity of the air. The air itself is the medium through which we maintain the conditions that promote health and comfort, and one of the strongest arguments for mechanical ventilation is the fact that it is by means of mechanical devices only that we can obtain satisfactory and accurate control.

"Bearing in mind then what I call the modern conception of ventilation, let us inquire into the field of its application. What is the necessity for ventilation in modern buildings, and when I say 'ventilation' I mean mechanical ventilation, as it is perfectly apparent to any unprejudiced person that in this latitude accurate control of all the factors that go to make up the air conditions in a room can be obtained in no other way.

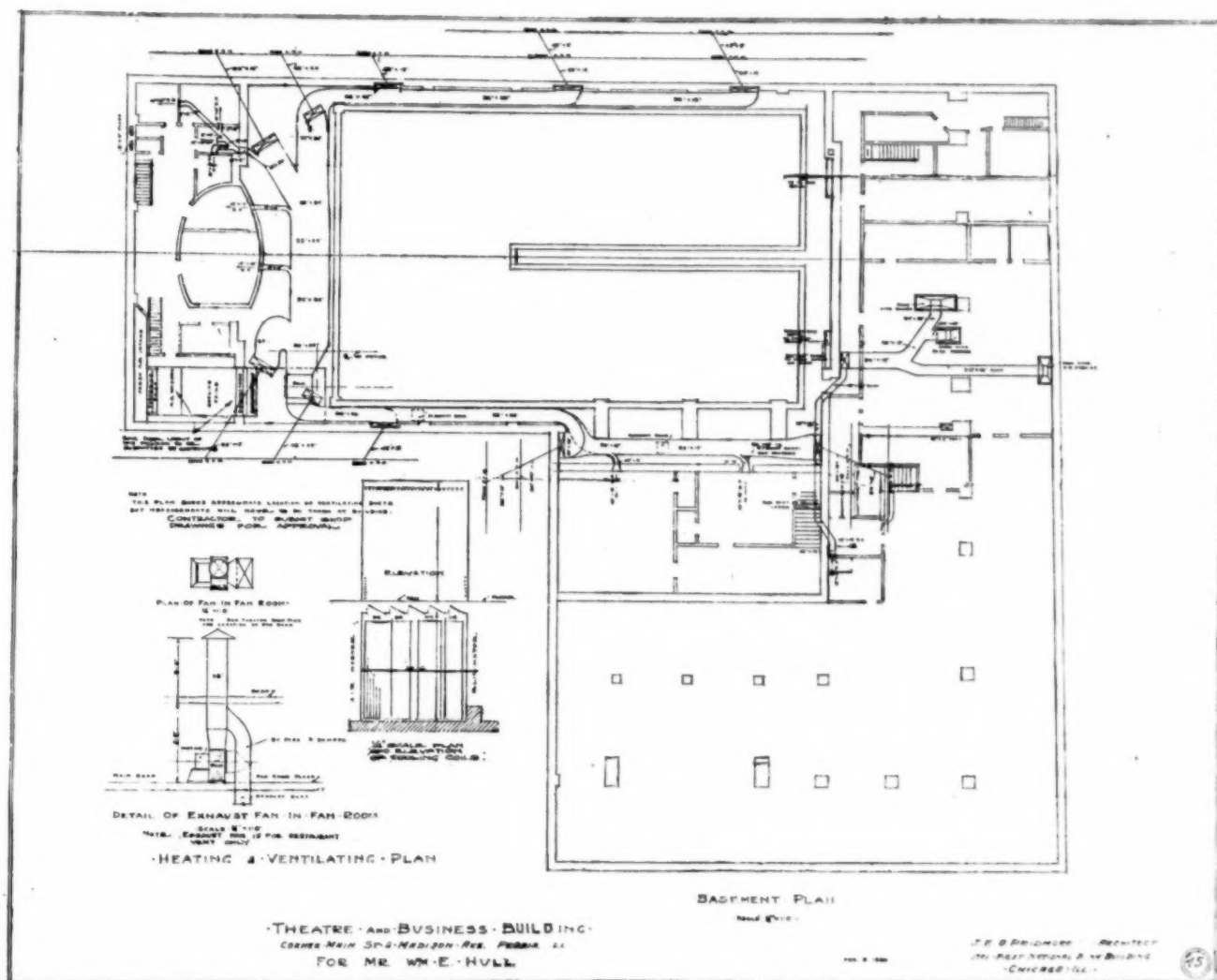
"Schools: At the present time marked improvement in school sanitation has been made. We no longer expect as a matter of course that the child will suffer in health from school attendance, and yet there is much to be done, particularly in the smaller cities and



country districts. Those having the matter of school construction and maintenance in charge are not educated as to the real meaning of ventilation. Many of them still believe that it is only a matter of supplying fresh air. They have no conception of the importance of air cleaning devices, humidification, temperature, and humidity control. The result is that millions of dollars are annually wasted, or at least poorly expended in the purchase of ventilating equipment that does not fulfill its purpose. This situation has given rise to a certain vicious form of propaganda which condemns mechanical ventilation in its entirety and suggests that it be supplanted by window ventilation alone. If the

they should be brought to a full realization of its importance. No window ventilated school building should be allowed, no gravity or mechanical direct or indirect system, because experience and tests have demonstrated conclusively that satisfactory results cannot be obtained in this way. Every school should be equipped with a plenum system of ventilation, including air washer and both temperature and humidity control.

"Churches: Saxon Snell, the great English architect, once said that he did not say that mechanical ventilation was not desirable, but he did say that no church should be constructed that required it. After the lapse of nearly a century we can still agree with



Heating and Ventilating Plan for Large Theatre and Restaurant in Peoria, Illinois. Installed by Charles Johnson Hardware Company, Peoria.

persons in authority can be brought to a correct realization of what ventilation really means, they will see how impossible it is to maintain conditions necessary for safeguarding the health and insuring the proper development of school children by the use of windows alone.

"The open window means dangerous drafts to pupils located in its vicinity. It means the ingress of large amounts of dirt and dust and noise from the street. It means an air supply that it is impossible to control, and the inevitable result of window ventilation in school rooms is no ventilation at all, with disastrous results on the health and welfare of the pupils. A serious responsibility rests upon officials having the subject of school ventilation under their control and

the views expressed by Saxon Snell, but times have changed. A century ago churches were constructed with an enormous air space, with large numbers of artistic windows and on extensive grounds, and the buildings were used only for church purposes. Today we find churches constructed with perhaps only 10 per cent of the total air capacity per occupant that was customary a century ago. Furthermore, today they are used not only as places of devotion and worship but as schools, for social gatherings, and many other purposes. They are constructed in congested city districts on an inadequate ground space and we find at the present time that it is practically impossible to maintain satisfactory air conditions in the church by means of windows. Mechanical ventilation is our

only recourse, and in Chicago we require it in every church auditorium where the seating capacity exceeds 500. Even in churches having a capacity of less than 500, an area equal to 12 per cent of the floor space is required in windows and a clear space on either side of the building of not less than 20 per cent.

*"Theatres:* It is hardly necessary to discuss at this time the necessity for mechanical ventilation in theatres. It was a question perhaps when the moving picture industry was in its infancy ten years ago, and considerable discussion was indulged in at that time as to the necessity of mechanical ventilation in theatres. In 1910 the City of Chicago began the enforcement of its ventilation ordinances, which required a mechanical equipment in all theatres. At that time the ordinance was considered drastic and the requirements excessive and considerable difficulty was experienced by the health authorities in enforcing the provisions of the law, in fact one court action attempting to prevent the enforcement of the act occupied a period of one year lacking three days. It was finally decided in favor of the city. At the present time no difficulty is experienced in making the theatre man comply with the ordinance, in fact the practice at the present time is to far exceed the legal requirements both in air supply and in other accessories which insure satisfactory operation. Theatre owners have learned by experience that no part of their investment brings a larger and a surer return than that expended in maintaining comfortable air conditions for their patrons.

*"Factories:* Rather than to advance arguments regarding the necessity of mechanical ventilation in factories, I prefer to direct your attention to certain standards that have been found reasonable and practical that have been developed by the Chicago Commission on Ventilation with respect to factory ventilation. A long series of tests were made by this Commission in a number of factories in Chicago with the view of determining the line of demarkation between those factories that required mechanical ventilation and those that did not, and it was established by these tests that where a factory had at least 1000 cubic feet of air space per occupant and the room was exposed and provided with windows on four sides, and the air current in the same not seriously obstructed by partitions, machinery, merchandise, etc., and where the manufacture processes carried on did not contaminate the air by dust or other injurious substances, and where adequate heating facilities were provided with automatic temperature control, mechanical ventilation is not required. If the air space per occupant is less than this, or if the window space and exposure is diminished, then mechanical ventilation is required for the protection of the employees, and moreover, the investment by the factory manager will be doubly returned in more and better work by the employees.

*"Department Stores:* When one looks at the department store from the outside he is immediately impressed in our cities at the present time are so well provided with windows that mechanical ventilation is unnecessary. However, going inside the building the first thing we learn is that all the windows on the main floor are used for display purposes and are of no value whatever for ventilation purposes. The same is true

to a certain extent on the second floor, and on all the floors the percentage of available window space as compared to the floor area is very small. For the protection of the employees in these institutions mechanical ventilation is imperative in the basement and in floors below this, also on the main floor and the second floor. On floors above the second the question becomes one of occupancy. In the toy department and grocery departments it is extremely difficult and frequently impossible to maintain safe air conditions without mechanical ventilation, in fact it is the exception at the present time for any architect to design buildings of this character without mechanical ventilation on the floors mentioned.

"A new field that has recently opened is that of air conditioning. Candy manufacturers, manufacturers of textiles of various kinds, of rubber, and many other industries, are learning that they can materially improve the quality of their product and also can increase production, sometimes several hundred fold, where they control the air conditions in their factories. This is a field that has been scarcely touched and will develop as our knowledge of the desirable air conditions increase, and in all probability a few years hence will find few manufacturing establishments where air conditioning is not in use, not only for increasing and improving the product but to insure the better health and welfare of the workmen.

"In conclusion, I wish to call your attention once more to the true conception of ventilation and to make a plea for the installation of a complete job, as it is this kind of an equipment only that gives satisfaction, and satisfaction means an ever-broadening field, and we should always bear in mind that we are dealing with more important things than the cold iron we fabricate. Every job well done means more comfort, better health, and a longer life to those who live under the conditions which we create."

The illustration which is shown herewith presents the plan for the installation of a ventilation plant in the theatre and business building of William G. Hull, at Peoria, Illinois.

The architect who was in charge of the construction is J. E. Pridmore, 1701 First National Bank Building, Chicago.

The installation was planned and supervised by P. A. Johnson of the Charles Johnson Hardware Company, Peoria.

### ***Pamphlet Gives Definite Data on Pipeless Furnace Gratings.***

What is claimed to be the first authentic information as to open areas in gratings for pipeless warm air furnaces, is contained in a pamphlet recently issued by the Independent Register & Manufacturing Company.

The data given comprise areas for sizes ranging from 18 by 18 inch floor openings to 52 by 54 inches, and includes all standard sizes.

For further information, installers and dealers are advised to write to the Independent Register & Manufacturing Company, 412 Perry Payne Building, Cleveland, Ohio.



# Practical Helps for Tinsmiths

*No Two Jobs Are Exactly Alike. Therefore, the Sheet Metal Worker Has to Meet Each Difficulty as It Comes. Send Your Problems to Us. Let Our Experts Help You.*

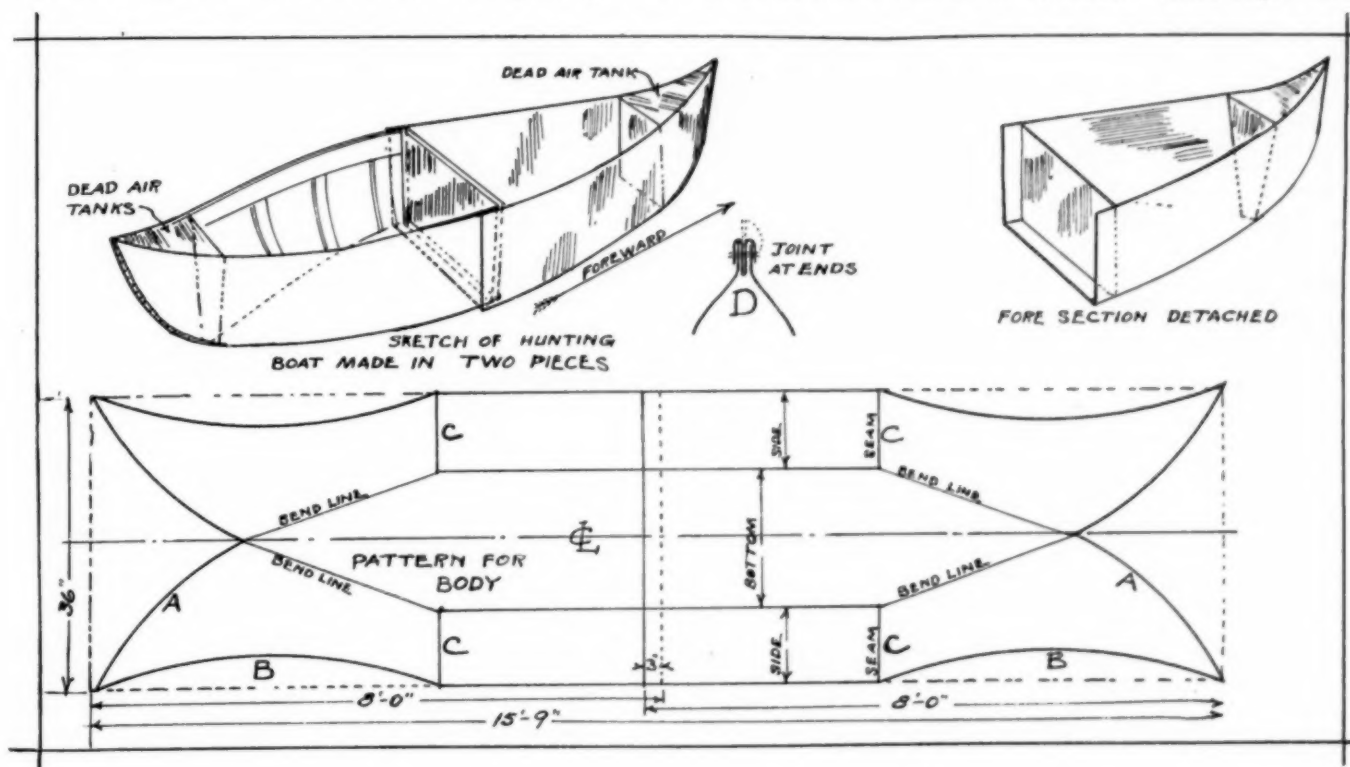
## LAYOUT FOR HUNTING BOAT.

By O. W. Kothe, Principal St. Louis Technical Institute and Instructor in the David Rankin, Jr., School of Mechanical Trades, St. Louis, Missouri. Written especially for American Artisan and Hardware Record.

Sheet metal workers have plenty of opportunity of soliciting business from the sportsman who follow the hunting game in their season in making sheet metal boats. These boats can be made of many designs and

The width of bottom can be taken from other boats, so a substantial body will be had, and the remaining difference can be left for the side. This permits drawing the bend lines on the ends.

Now these bend lines are not bent sharp but rounding, making the bend sharp as it nears the 3 inch lap line, so a square connection can be made in the center. By bending up the points B-A it is necessary to slip in as at C, where seams will be made. These edges will



Layout of Patterns for Hunting Boat.

individual features to satisfy the hunters. Our sketch in this drawing shows the peculiar shaped boat that is made in 2 pieces, having a solid end placed in each of the half parts. This enables disconnecting and loading on a motor truck or wagon and carting in a convenient manner. At a lake or slough the boat can be taken down and connected together and put out in the water. Or if there are two men then each can take a part section and roll into some rushes and await for his ducks or geese.

The patterns required are of a very simple nature and it is surprising the unique shape it makes of a boat. The best practice is to place 2 sheets of iron, each 96 or 120 inches long by 36 inches wide, together. Then near the ends cut out a segment as at B-B. This is to make a curvature toward the bow post and not have this point too high. Then on the ends sweep arcs as at A-A. This is for cutting in and making the round nose of the bow or stern.

These curvatures both A-B can be made at pleasure.

over-lap and in the event they do not, small pieces will have to be filled in and securely riveted every inch and a quarter to an inch and a half and soldered. The exact width in these seams will of course be governed by the shape of the sides, whether they are made flaring or brought up square, as either shape can be easily arranged for.

The bow and stern joints are made as at D, well riveted and soldered, so that the boat will stand considerable jolt before springing a leak. Dead ends are placed in each part of considerable size as shown in sketch and where a hunter is of considerable weight or carries considerable luggage, it may be necessary to add a second dead air tank, along the ends and the middle of boat. In this way a separate tank can be placed on each side of the end pieces and re-enforced to be used as a seat. This would safeguard against the sinking down too deep in the water. The exact way of providing connections between the forward and the after half of boat, is a matter we must leave to the

workmen as any one of a dozen different methods will be suitable, as long as they hold the boat securely together and do not come apart of their own accord. Other re-enforcements to help stiffen the boat can readily be built in with wood strips or small channel iron bars. Other equipment must be attached as needed.

### ***Detroit Sheet Metal Contractors to Work Hard for Baseball Trophy.***

At the July 11th meeting of the Detroit Sheet Metal Contractors' Association many suggestions were offered to improve the baseball team which is to represent Detroit at the State Outing in Grand Rapids, July 29th and 30th. Principal of these was the selection of Emil Banks as captain and Fred Striewski as manager. It is evident from the enthusiasm displayed at this meeting that the members are leaving nothing undone which will increase their chances of winning these games. Two practice games will be held, dates of which will be announced by Captain Banks.

An important change was made in regard to the number of meetings to be held each month, it being agreed that one meeting was sufficient for the general assembly. The clubs which are now being formed will meet oftener. A committee consisting of R. C. Mahon, Arthur Myr and Otto Schwartz was appointed to arrange a program for each general meeting.

A letter from F. E. Ederle, the efficient State Secretary, was read, suggesting that a meeting of all local association secretaries or delegates be held once every two months in Lansing for the purpose of exchanging ideas and better cooperating one with another. The suggestion met the unanimous approval of all present and Otto Schwartz was selected to represent Detroit at these meetings.

### ***Interesting Exhibit of Apprentice Work Is Shown at Washburne School.***

The Washburne Continuation School, at Union and Fourteenth Street, Chicago, is operated entirely as a "technical" school, under the supervision of the Chicago Board of Education.

One of the important departments of this fine school is that devoted to sheet metal, which is directed by Adolph Kealer, who has a large number of boys and young men in his charge and is teaching them the practical as well as the theoretical points about sheet metal work.

Here these youngsters are required to spend a certain number of hours each week, receiving their regular pay as apprentices; they learn to draw their own designs, to lay out their own patterns and from these patterns to make various articles that are common to the trade of the sheet metal mechanic, as well as many decorative pieces of art work.

An exhibition is now being held at the Washburne School of the work which has been carried on during the past year, and a number of valuable prizes will be awarded to the students who have shown the most progress, these prizes being donated by the employers.

The public is invited to view this exhibit, and a special invitation is extended to all sheet metal contractors

to attend any time until July 27th when the exhibit will close.

The prizes are to be distributed on Wednesday, July 20th, and it is urged that a large representation of employing sheet metal men, as well as journeymen workers, be present at that time.

### ***Fine Program of Sports Provided for Michigan Sheet Metal Men's Outing.***

The program for the Sixth Annual Outing of the Michigan Sheet Metal Contractors' Association which is to be held at Grand Rapids on July 29th and 30th, indicates that as usual, there will be "a pleasant time had" by all those who will be fortunate enough to attend.

Headquarters will be at Hotel Pantlind, Grand Rapids, where all visitors, sheet metal contractors, salesmen and ladies will register during the forenoon of Friday, July 29th.

The committee in charge requests that reservations be forwarded promptly, in order that they may know with reasonable certainty the number for which it will be necessary to provide. Notify Secretary Frank E. Ederle, 1121 Franklin Street, S. E., Grand Rapids, Michigan. The program follows:

#### **Friday, July 29.**

Registration and reception at Pantlind Hotel.  
2:00 p. m.—Sight seeing trip starting promptly at this hour from the hotel.  
7:00 p. m.—Banquet at Grand View Auto Club given by the wholesalers of Grand Rapids.  
Dancing following the banquet.

#### **Saturday, July 30.**

10:00 a. m.—Baseball game at the Central League grounds between a team composed of players from Bay City, Saginaw, Flint and Lansing against Detroit.

12:00 M.—Lunch in Ramona picnic grounds furnished by the Grand Rapids Heating and Grand Rapids Sheet Metal Contractors' Associations.

2:00 p. m.—General sports. This event will be so arranged as to provide excitement for everybody.

3:00 p. m.—Baseball game, winners of the forenoon game versus a team selected from Battle Creek, Jackson, Hastings and Kalamazoo. The winner of this game will receive temporary possession of the State Loving Cup now held by the Battle Creek-Kalamazoo combination.

In addition to this the winner will receive permanent possession of the "Armco Cup" furnished by the American Rolling Mill Company.

4:30 p. m.—Drawing Contest. About fifty prizes have already been secured, some of which are of considerable value. Among the prizes donated is a furnace from the Taplin Furnace Company of Grand Rapids.

#### **General Information.**

Visitors will please register as soon as they arrive and receive badges and credentials.

All events will start promptly and if you wish to be in on everything you must be on time.

Reservation cards should be returned promptly so that the committees will have some idea of the number to expect.

Don't fail to bring the wife and kiddies. There will be fun and entertainment for both.

### ***Uses AMERICAN ARTISAN Patterns Almost Every Day.***

TO AMERICAN ARTISAN AND HARDWARE RECORD:

Enclosed please find check in renewal of my subscription to AMERICAN ARTISAN AND HARDWARE RECORD. Last January I lost everything I possessed by fire and my greatest loss was my pattern books and the patterns from your valuable journal which I had been saving for almost twenty years and to which I had occasion to refer almost everyday.

CHARLES E. HEDBLUM.

—, Illinois, July 9, 1921.



### **Prominent Men Will Address Ohio Sheet Metal Contractors.**

The "Dope Sheet" for the Convention of the Ohio Sheet Metal Contractors' Association, which is to be held July 19 to 21, at Dayton, shows an imposing array of men prominent in the sheet metal and kindred trades who are to speak at this gathering.

On Tuesday, July 19th, President A. E. Munkel will deliver his general report. E. W. Norman, President of the Jobbers and Traveling Men's Auxiliary of Indiana, will also speak.

George Harms, former President of the National Association of Sheet Metal Contractors, and Allen W. Williams, Secretary of the National Warm Air Heating and Ventilating Association, will speak on Wednesday.

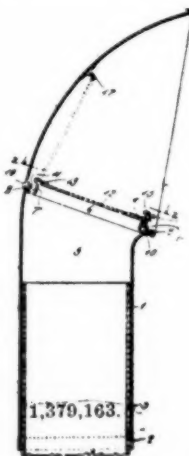
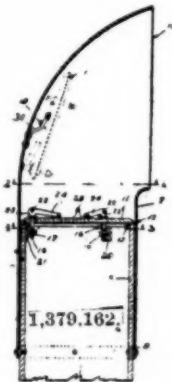
On Thursday forenoon, James B. Carson, Secretary of the Ohio Hardware Association, and Sidney S. Kusworm, orator of national reputation, will speak.

### **Ship's Ventilating Cover and Cowl Are Patented.**

Under numbers 1,379,162 and 1,379,163, United States patent rights have been granted to Theophilus M. Brown, Seattle, Washington, assignor of one-third to Howell P. Parker, and one-third to Robert J. Howland, Seattle, Washington, for a ship's ventilator cover and cowl described in the following paragraphs:

The combination with a ship's ventilator pipe, of a cover arranged to rest upon the top end of said ventilator pipe, brackets within said ventilator pipe, bolts projecting downwardly through said cover and provided with means for engaging said brackets and cam levers for exerting

a tension on said bolts.



closed positions.

In a ship's ventilator pipe, a collar having a flange riveted to the interior of the pipe, and a second flange inset from said first-named flange forming a circular trough, the forward portion of said collar being set in the throat of said pipe approximately level with the lower edge of the pipe opening, the rear edge of said collar being set above said forward edge to provide drainage for said trough, a cover plate hingedly connected at its rim to said collar, and latch devices to secure said cover plate in open and in

Advertising is intensive salesmanship on a big scale. It flashes your selling-point straight into the eye of the market; into the brain and heart of the ultimate consumer—a million of him at once. It is the wireless-world-call of modern business, whether that business be trade or philanthropy, industry or war.

### **Which Kind of Copper Is Best for Roofing and Other Outside Work?**

TO AMERICAN ARTISAN AND HARDWARE RECORD:

Please advise us which is best to use on outside work, such as valleys, roof gutters, eaves troughs, church domes, etc.—Cold rolled, hot rolled, or soft copper.

Yours truly,

BEATTY BROTHERS.

—, Ohio, July 13.

There appears to be some difference of opinion as to which kind of copper is really the best to use, supply houses informing us that they sell all three classes to sheet metal contractors and that some use cold, while others use hot rolled or soft copper.

Harry C. Knisely, of the Harry C. Knisely Company, Chicago, which does a large amount of high grade sheet metal roofing and cornice work, states that for valleys, hanging gutters and eaves troughs they use cold rolled, while for box gutters soft copper is used as lining.

For church domes, Mr. Knisely states, that cold rolled is best for standing seam jobs, as it will hold its shape better.

We shall be glad to hear from the sheet metal contractors in regard to this matter.

### **Saint Louis Sheet Metal Contractors Hold Open Air Meeting.**

The regular monthly meeting of the Sheet Metal Consumers' Protective Association of St. Louis, Missouri, was held Tuesday, July 12th, at the Majestic Garden, 6432 Gratiot Avenue, with the wives and children of the members present.

After the business session a splendid dinner was enjoyed.

Plans are now being arranged for the Annual Picnic and Boat Excursion of the Association, which will take place early in September.

### **Describes the Making of Hollow Drill Steel.**

The more the hardware dealer knows about the goods he sells the more service he is able to give his customers and the greater the volume of his sales.

That is the reason for reproducing herewith a helpful description of how hollow drill steel is made, from an article by P. A. E. Armstrong, vice-president Ludlum Steel Company, Watervliet, New York, in "Chemical and Metallurgical Engineering":

Hollow drill steel made by casting the metal around a tube and mechanically working the hollow ingot down to the required size (filling up the hole with sand and later removing same after rolling) will have an artificially produced equivalent decarbonized core which will be free from any such tendency toward splitting and driving in radial cracks as has been noticed in other forms. The surface of the inside of the tube will be comparatively smooth, giving a uniform cooling rate to the inside of the bar, again reducing the tendency for a radial crack to start.

One of the reasons why the carbonless walls of the

tube of the bars made by this method do not crack in manufacture is because the mild steel tube is not the result of a decarbonized steel highly impregnated by oxygen and oxides and having a number of microscopical holes where the carbon of the carbides last resided. These holes are places of weakness which may or may not weld up, depending on whether the interior of these microscopical cavities is coated by an oxide layer or filled with gas, either from the gas occluded in this steel or that which has penetrated from the furnace atmosphere. Decarbonized steel is, in my opinion, less strong than mild steel which has been originally made in low carbon and worked down to the required size.

The method employed by the Ludlum Steel Company in the manufacture of hollow drill steel is to insert a high-grade low-carbon mild steel tube, suitably cleaned by sandblast, into an ingot mold and cast the hot metal around the tube. We fill up the tube with some air-excluding material so as to prevent oxidation and scaling of the inside of the tube, generally using a high-grade sand for this purpose. The ingots are then rolled in the usual way down to the finished bar. The bars are cut up to required length and the sand extracted by a special method, which is very speedy and extremely effective.

### **American Artisan Advertisement Brings Good Returns.**

TO AMERICAN ARTISAN AND HARDWARE RECORD:

It is a pleasure to inform you that the advertisement you inserted for me about a radiator repair outfit for sale brought me results. I sold the outfit. My investment in your journal has more than paid returns. I thank you.

J. B. SULLIVAN.

—, Iowa, July 6, 1921.

### **Tells How Advertising Gains Good Will of Consumer.**

Specialization which has sprung up through the necessities of modern civilization has thrown too wide a gap between the producer and the consumer—but advertising is filling the gap. George C. Vedder of the Johnston Overseas Service, New York, gave a very interesting account of this process in an address before the Pan American Advertising Association, which is a division of the Associated Advertising Clubs.

"To the pioneers in American Advertising is due most of the credit for discovering the consumer," he said.

"In bygone days, the man who produced manufactured goods, sold them to his neighbors in the same shop in which he made them with his own hands or supervised their making by others. He was capitalist and laborer, purchasing agent, production manager and sales manager, manufacturer and retailer all rolled into one.

"His establishment was called a 'shop' and it is interesting to note that the double meaning of this word still persists long after the functions of production and distribution have been, for the most part, divorced.

"There is no retailing done in these days in a machine shop, nor are the products retailed in a butcher

shop or a candy shop necessarily produced there. In tailor shops, shoe shops, etc., we still have, in some instances, the combination of the producing and distributing functions.

"As the volume of the trade in manufactured goods grew, more and more wholesalers and jobbers came into existence in large distributing centers in response to a demand on the part of retailers for better service in deliveries and credit terms. This development removed the producer one step further from his consumers, with whom generally speaking, he lost all intimate touch.

"The bad part of the situation for both producer and consumer was that the maker who once knew his consumers and was known by them and whose product stood for something more than such and such an article at such and such a price, found himself a mechanical fabricator of products the demand for which depended chiefly on middlemen who were in business for their own profit, had no interest whatever in the producer and sometimes did not take as much enlightened interest in the welfare of their customers that they should have, either because they handled so many products that they could not possibly know them all well or for more sordid and less creditable reasons.

"Such was the situation when the Civil War gave us our start as a manufacturing nation. Competing with each other behind the tariff wall which theoretically protected all alike but which in reality gave no protection to the maker of quality articles against the inroads of those who made a cheaper article of the same kind, our pioneer advertising managers rediscovered the consumer and introduced the maker to him through the various means of general publicity."

### **Notes and Queries.**

#### **Steam Cookers.**

From The Forsyth Hardware Company, Incorporated, Colfax, Iowa.

Please furnish us with names of manufacturers of large size steam cookers for hospital purposes.

Ans.—Stearnes Company, 133 West Lake Street, Chicago, Illinois; John Van Range Company, Fifth and Broadway Streets, Cincinnati, Ohio; Born Steel Range Company, 517 Huron Road, Cleveland, Ohio.

#### **Breeding Oil Burners.**

From C. L. Epps, 207 North Washington Street, Van Wert, Ohio.

Kindly let me know who manufactures the Breeding oil burners.

Ans.—Breeding Heat and Power Corporation, Hulbert Block, Cincinnati, Ohio.

#### **Tubular Cores.**

From John R. Chapman, Linton, Indiana.

I would like to know who makes tubular cores for replacement standard auto radiators.

Ans.—The G. and O. Manufacturing Company, Replacement Department, New Haven, Connecticut.

#### **Blow Pipe Testing Tube.**

From D. J. Jonas, Rural Route Number 1, Box 31, Dubuque, Iowa.

Will you kindly advise where I can secure a blow pipe testing tube used to test suction of fans in sash and door factories?

Ans.—Cyclone Blow Pipe Company, 2542 West 21st Street, Chicago, Illinois.



# Illustrations of New Patents

*Watch This Page. Keep Yourself Informed Concerning Improved Devices Which May Save Labor in Your Shop or Add Another Source of Income to Your Retail Store.*

1,379,849. Try Square. Jesse Thomas Campbell, Elbridge, Tenn. Filed May 4, 1920.

1,379,978. Pipe Wrench. Fredrick M. Hamilton, Dayton, Ohio. Filed June 26, 1919. Renewed April 15, 1921.

1,380,076. Washing Machine. John Newsome, Sandersville, Ga. Filed September 8, 1920.

1,380,151. Combined Gas and Coal Range. Frank V. Knauss, Portsmouth, Ohio. Filed March 19, 1919.

1,380,317. Tool Holder. Oscar Gustafson, Seattle, Wash. Filed May 12, 1920.

1,380,321. Air Moistening Structure for Hot Air Furnaces. Ernest G. Liebold, Detroit, Mich. Filed January 19, 1920.

1,380,355. Implement or Device for Killing or Disabling Insects, Flies, or the Like. Arthur W. Cash, Decatur, Ill., assignor to United States Wire Mat Company, Decatur, Ill., a Corporation of Illinois. Filed December 3, 1917.

1,380,396. Stove. Charles F. Kulp, Wellston, Mo. Filed January 2, 1918.

1,380,423. Spike. Marcel K. Sessler, New York, N. Y., assignor to American Spike Company, Incorporated, New York, N. Y., a Corporation of New York. Filed March 6, 1919.

1,380,464. Lawn Sprinkler. Charles E. Brooks, Minneapolis, Minn. Filed February 15, 1919.

1,380,549. Hose Reel. John R. Flood, Everett, Wash., assignor of one-half to Thos. L. Moore and Wm. Sheller, Everett, Wash. Filed April 12, 1920.

1,380,551. Wringer Mechanism for Washing Machines. Benjamin E. Getz, Morton, Ill., assignor to

Getz Power Washer Co., Morton, Ill., a Corporation of Illinois. Filed July 11, 1919.

1,380,560. Doughnut Cutter. Alfred E. Johnson, Racine, Wis. Filed November 17, 1920.

1,380,566. Pipe Wrench. Arthur Wellington Kiefer, Chicago, Ill. Filed October 21, 1920.

1,380,611. Level. Robert Walker, Toronto, Ontario, Canada. Filed May 27, 1919.

1,380,628. Foldable Hacksaw. Lawrence Dunston Barner, Fort Bliss, Texas. Filed March 5, 1920.

1,380,629. Knife. Arthur R. Barnett, Portland, Oregon. Filed March 10, 1920.

1,380,668. Door Hanger Track and Housing. Cecil R. Martin, Sterling, Ill., assignor to Frantz Manufacturing Co., Sterling, Ill., a Corporation of Illinois. Filed June 20, 1918.

1,380,734. Hot Air Furnace. Maximilian J. Otto, New York, N. Y. Filed October 1, 1919.

1,380,744. Tool Holder. Charles A. Simmons, Albany, N. Y. Filed September 24, 1920.

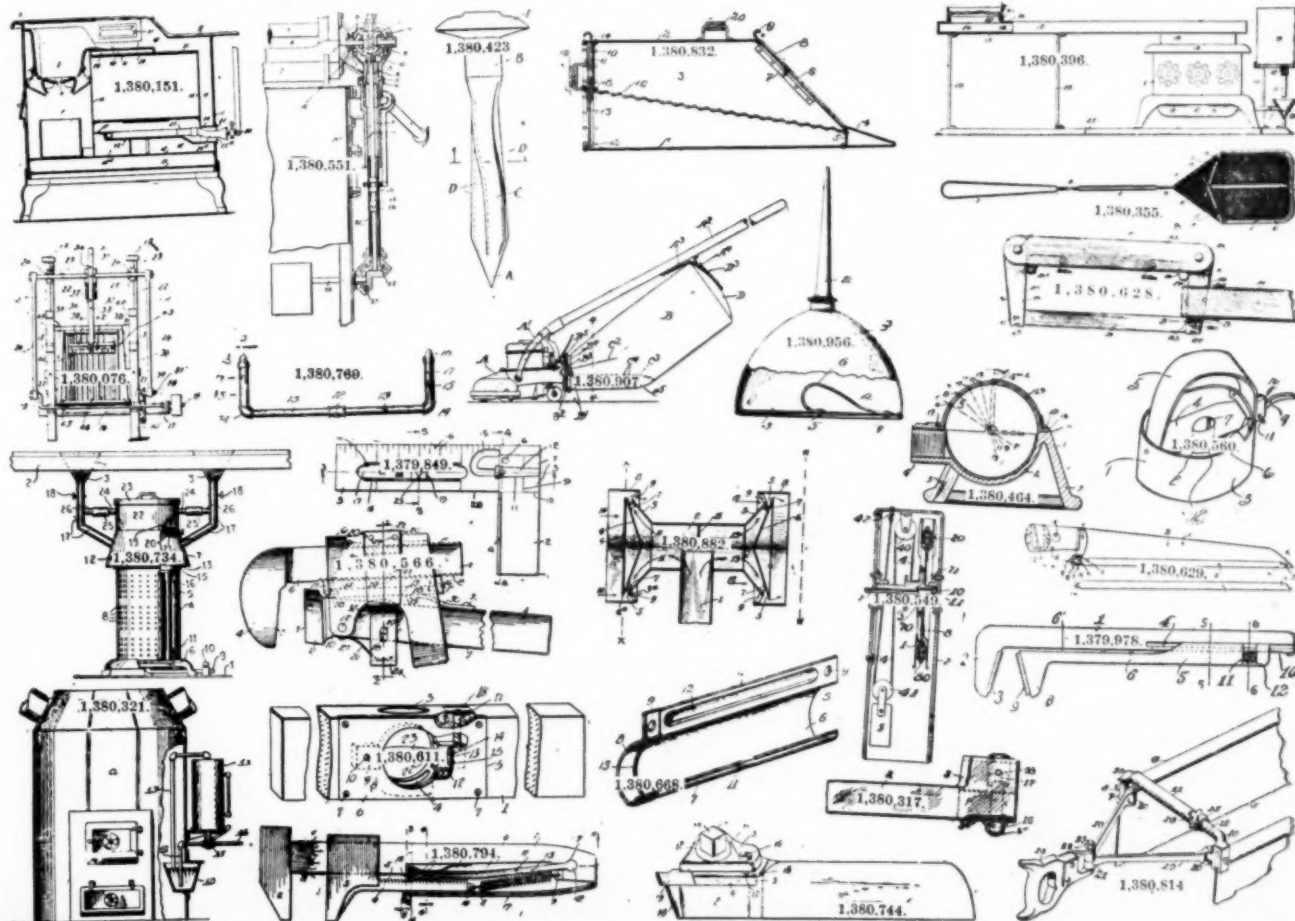
1,380,769. Sprinkler. John Carlson, Chicago, Ill. Filed September 16, 1920.

1,380,794. Monkey Wrench. William Gordon, Union, N. J. Filed October 20, 1919.

1,380,814. Saw Holder. Kenneth Lindsay, Cedar Rapids, Iowa. Filed May 10, 1920.

1,380,822. Ash Sifter. Edward Nicholas, Cambridge, Mass. Filed November 17, 1920.

1,380,882. Chimney Cap or Ventilator. Arthur F. Brassington, Port Richmond, N. Y. Filed May 24, 1920.



# Weekly Report of the Markets

*General Conditions in the Steel Industry. Review of Prices and Tendencies in Sheet Metals, Pig Iron, etc.*

## **FURTHER REDUCTIONS MAY BE EXPECTED IN STEEL PRICES.**

The feeling in the metal market is growing that the point of ultimate decline and that therefore also of consequent stabilization of prices can not be very far distant under the present cost conditions, and while reductions in wages to labor and prices for steel may be expected, many well posted men say that such reductions will not be as deep as those which have been made during the past month.

There is a more expectant tone to the market, even though the new open prices are yet to undergo a real test.

The jobbers have been buying in larger volume during the past week, particularly in the West and especially in steel bars and wire products.

A reasonably well sustained demand for steel is also being kept up by automobile manufacturers, and the tone in the structural contract situation is improved, as a considerable amount of new work is being offered and revived.

Another encouraging feature of the general metal market is the outlook for a definite conclusion as to the proposed payment by the Federal Government to the railroads which will materially stimulate this section of the market.

In the softer metals, a slight reduction is made by the Chicago warehouses, but it is not generally thought that this reduction will stand for any length of time, but rather that when heavier buying is resumed prices will once more advance.

The new agreement between the Western Sheet and Tin Plate Manufacturers' Association and the Amalgamated Association of Iron, Steel and Tin Workers, effective as of July 1st, shows that the rise and fall of tinplate workers' wages will not be so rapid as under the old rule, the new arrangement providing for one cent instead of 1 1/8 cent for each 5 cent rise or decline in tinplate. The extra man allowed for each crew of sheet workers will hereafter only be permitted between April 1st and October 1st instead of during the entire year.

## **Steel.**

In order to conform with the lowered prices on the major lines of steel, manufacturers have announced reductions of from three to four dollars per ton on hoops and bands and of from four to five dollars on wire rods, with similar changes in other lines.

Chicago warehouses report an improvement in orders, although the tonnage is still far from satisfactory, as the large consumers continue holding off placing orders for steel bars. Warehouses are well supplied but the lower prices have not developed the business which had been expected as a result of the new quotations.

In the Pittsburgh District there appears to be a slight revival in the steel plate market owing to the railroad repair work which is beginning to become absolutely necessary. Some plate makers continue to quote 1.90 cents base Pittsburgh, although the leading producers are quoting 2.00 cents.

## **Fence Wire and Nails.**

There are many signs which point to an early resumption of activity in wire nails. Stocks are universally low; rural districts have been holding up buying for nearly a year and are sorely in need of supplies; the 25 cent reduction per 100 pound keg which was recently put into effect by the American Steel and Wire Company has induced a number of jobbers which cater particularly to the country trade to increase their buying. Smooth annealed fence wire in less than carload lots is quoted by Chicago warehouses at \$3.85 per 100 pounds and galvanized at \$4.45.

## **Bolts, Nuts and Rivets.**

The new prices on bolts and nuts have had the effect of stabilizing the market and a fair amount of buying is expected soon.

Cleveland reports that a Detroit automobile maker is in the market for 10,000,000 bolts, the order being expected to be closed this week. Generally speaking, the run of inquiries have given a better tone to the market as the prices are said to be as low now as any anticipated steel reduction will permit.

The rivet market still remains weak, Cleveland prices for small rivets being on the base of 65, 10 and 10 per cent.

## **Copper.**

There appears to be a little more inquiry for copper from domestic consumers, but sales are light and manufacturers of finished products report very little improvement in business plants, operating at around one-third capacity.

Some of the New England consumers have been in the market, but only for small quantities, and most of the large producers refuse to compete for the small inquiries that are in the market for electrolytic. The New York price quoted by second hands is about 12 5/8 cents f. o. b. refinery for immediate shipment. There appears to be no speculative interest in the copper market at all, and it may be stated for general purposes the market on electrolytic is fairly well represented by a quotation of 12 3/4 cents.

Chicago warehouses have reduced their quotation on sheet copper 1/4 of a cent a pound, the new price being 20 3/4 cents, mill base.

## **Tin.**

There has been a fair business during the week in the tin market and on last Monday practically all of the



tin that was being offered for London account was taken.

This buying appears, however, to be only for quite immediate consumption, or at any rate not for any later period than September, and the outlook for a sustained improvement in prices is not particularly good. The New York price on Straits tin may be quoted at 28.37½ cents which is a little higher than last week.

Chicago warehouse prices have been reduced ¾ per cent per pound, the new quotation being 31¼ cents for pig tin and 33¼ cents for bar tin.

### **Solder.**

No changes have been announced by Chicago warehouses on solder prices, the quotations remaining as follows: Warranted 50-50, \$21.00; Commercial, 45-55, \$19.50; Plumbers', \$18.50; all per 100 pounds.

### **Zinc.**

The reports on production and shipment of zinc during the month of June show an increase of over 6,000 tons, thus making the total in smelters' hands 19,000 tons, and it will need several months of good normal business to absorb this surplus stock. Inquiry in the Chicago market brought forth the information that a fair amount of sheet zinc is being bought by manufacturers of gutters and down spouts as well as for ornamental work. While none of the orders run into large amounts still the tonnage total may be considered fair in comparison with the general situation.

East St. Louis prices for July shipment may be quoted at 4.30 cents with August and September nominally 5 points higher per month.

The Chicago warehouses report a 5 cent cut on zinc in slabs, the new quotation being \$4.75. There is no change in sheet zinc, cask lots being quoted at 11 cents, with ¼ to ½ of a cent premium for smaller quantities.

### **Lead.**

Storage battery interests have been in the lead market during the past week for a fair tonnage, and other lines also continue to place orders at a fairly steady rate. There is no change in East St. Louis quotations, 4.35 cents being the ruling figure.

Chicago warehouse prices remain without change, quotations being as follows: \$4.80 for American pig, and \$5.55 for bar.

### **Sheets.**

The new prices on iron and steel sheets appear to be adhered to firmly, so far as new production and new business is concerned, but concessions are noted on old stocks of both black and galvanized sheets which some of the mills are endeavoring to liquidate.

This is particularly applicable to certain manufacturers of galvanized products who buy their black sheets and do their own galvanizing.

The demand in the Chicago district is scattered and usually for less than carload lots. Production at mills in this district has not been changed during the week, but the total tonnage on order is reported to have dropped off, although not to any great extent.

Chicago warehouses report a little more lively busi-

ness owing to the considerable amount of repair work which is being done on residences.

Warehouse prices remain as follows: 10 gauge blue annealed sheets, \$3.60; 28 gauge one pass cold rolled black sheets, \$4.90; and 28 gauge galvanized sheets, \$5.90.

### **Old Metals.**

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, \$12.50 to \$13.00; old iron axles, \$17.00 to \$18.00; steel springs, \$11.50 to \$12.00; No. 1 wrought iron, \$9.00 to \$9.50; No. 1 cast, \$12.00 to \$12.50; all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 6 cents; light brass, 3.50 cents; lead, 2.50 cents; zinc, 1.50 cents; cast aluminum, 9 cents.

### **Pig Iron.**

Foundry iron activity in the Chicago district is somewhat improved. While no large tonnage is offered, small orders for pig iron have increased in number. Furnace operations are unchanged and prices are soft. One hundred tons of malleable was sold in the week to a Wisconsin melter at \$19.50, Chicago. A Michigan manufacturer bought three carloads of resale foundry iron at \$21, delivered. Resale silvery iron is now out of the market. The furnace price for 8 per cent iron is \$33, equivalent to \$38.32, delivered in Chicago. Charcoal iron has sold during the week at \$32, furnace, but observers feel this is due for a sharp drop as it is regarded as out of proportion with pigiron.

Quietness continues to prevail in the Pittsburgh pig iron market. On the surface this appears to be a slight buying movement of resale metal although the tonnages changing hands are not large in the aggregate. Transactions in this direction have had little effect toward reducing stocks. Little demand exists for Bessemer iron. Inquiries for this grade are exceedingly light. Two inquiries for Bessemer were received today, one calling for a carload and another for 50 tons. These tonnages are representative of the amount of going business at present. Quotations on this grade continue from \$21.50 to \$22.00 valley, although the amount of business in this direction is not of sufficient volume to give the market a real test. The demand for basic also is light with buyers showing little interest in offering. The last block of basic which changed hands recently was a 2,000-ton lot sold by a valley steel works interest at \$20, furnace. The consumer has been a persistent buyer of valley iron and its transactions of about two weeks ago bring its total purchases for the year around 11,000 tons. Basic continues quotable between \$19 and \$20 valley. Offerings of foundry iron at \$20.50, valley, find no takers, business in this direction being very dull. Iron is obtainable readily at \$20 base valley.

Pig iron quotations in the Birmingham district are weak, and while \$21 is given as the base for Number 2 foundry (1.75 to 2.25 silicon) it is admitted that a concession of \$1 per ton would be granted on tonnages. It is said that it is possible to buy at even lower price. Large melters of iron are beginning to experience the severest depression and are using less iron.

# Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS	HARDWARE	Scratch.	BEVELS, TEE.
<b>PIG IRON.</b>	<b>ADZES.</b>	No. 18, socket Handled .....per doz. \$ 2 50	Stanley's Rosewood handle, new list .....Net
Northern Fdy. No. 2.....\$20 70-21 70	Carpenters'. Plumbs.....Per doz. \$29 00	No. 344 Goodell- Pratt, list less.....35-40%	Stanley iron handle.....Net
Southern Fdy. No. 2.....26 67	<b>COOPERS'.</b>	No. 7 Stanley...per doz. \$ 2 25	<b>BINDING CLOTH.</b>
Lake Sup. Charcoal.....37 50	Barton's .....Net		Zincd .....55%
Malleable .....\$20 70-21 70	White's .....Net		Brass .....40%
<b>FIRST QUALITY BRIGHT TIN PLATES.</b>	<b>Railroad.</b>	<b>AXES.</b>	Brass, plated.....40%
	Plumbs.....Per doz. \$30 00	First Quality, Single Bitted, 3 to 4 lb., per doz. 16 50	<b>BITS.</b>
<b>Per Box</b>	<b>AMMUNITION.</b>	First Quality Double Bitted .....per doz. 22 50	Auger.
IC 14x20 112 sheets \$12 50	Shells, Loaded, Peters.	Broad.	Jennings Pattern.....Net
IX 14x20.....13 60	Loaded with Black Powder, 18%	Plumbs. Can. Pat., 6-lb. 65 00	Ford Car.....List plus 5%
IXX 14x20.....15 20	Loaded with Smokeless Powder .....18%	Single Bitted (without handles).	Ford's Ship....." 5%
IXXX 14x20.....16 60	Winchester.	Plumbs, 4 1/2-lb.....19 50	Irwin .....35%
IXXXX 14x20.....18 10	Smokeless Repeater Grade, .....10 & 4%	Double Bitted (without handles).	Russell Jennings.....plus 20%
IC 20x28.....25 00	Smokeless Leader Grade, .....10 & 4%	Plumbs, 4 1/2-lb.....23 50	Clark's Expansive.....33 1/2%
IX 20x28.....27 20	Black Powder.....10 & 4%	<b>BAGS, PAPER, NAIL.</b>	Steer's "Small list, \$22 00..5%
IXX 20x28.....30 40	U. M. C.	Pounds .. 10 16 20 25	" "Large " \$26 00..5%
IXXX 20x28.....33 20	Nitro Club .....10&4%	Per 1000..\$5 00 6 50 7 50 9 00	Irwin Car.....35%
IXXXX 20x28.....36 20	Arro W.....10&4%	<b>BALANCES, SPRING.</b>	Ford's Ship Auger pattern Car .....List plus 5%
<b>COKE PLATES</b>	New Club .....10&4%	Sight Spring.....Net	Center .....10%
Cokes, 180 lbs.... 20x28 \$14 20	Gun Wads—per 1000.	Straight .....Net	Countersink.
Cokes, 200 lbs.... 20x28 14 50	Winchester 7-8 gauge 10&7 1/2%	<b>BARS, WRECKING.</b>	No. 18 Wheeler's..per doz. \$2 25
Cokes, 214 lbs....IC 20x28 14 85	" 9-10 gauge 10&7 1/2%	V. & B. No. 12.....\$0 45	No. 20 " " " 3 00
Cokes, 270 lbs....IX 20x28 16 65	" 11-28 gauge 10&7 1/2%	V. & B. No. 24.....0 75	American Snailhead " 1 75
<b>BLUE ANNEALED SHEETS.</b>	<b>Powder.</b>	V. & B. No. 324.....0 80	" Rose " 2 00
Base.....per 100 lbs. \$3 60	DuPont's Sporting, kegs..\$11 25	V. & B. No. 30.....0 85	" Flat " 1 40
<b>ONE PASS COLD ROLLED BLACK.</b>	" " 1/4 kegs 3 10	V. & B. No. 330.....0 90	Mahew's Flat " 1 60
No. 18-20.....per 100 lbs. \$4 70	DuPont's Canisters, 1-lb.. 56	<b>BASKETS.</b>	" Snail " 1 90
No. 22-24.....per 100 lbs. 4 75	" kegs.. 22 00	Clothes.	Dowel.
No. 26.....per 100 lbs. 4 80	" 1/4 kegs 5 75	Small Willow...per doz. \$15 00	Russell Jennings.....plus 20%
No. 27.....per 100 lbs. 4 85	" canisters 1 00	Medium Willow. " 17 00	Gimlet.
No. 28.....per 100 lbs. 4 90	Hercules "E.C." kegs.....22 50	Large Willow... " 20 00	Standard Double Cut Gross \$3 40
No. 29.....per 100 lbs. 5 00	Hercules "Infallible," 25-can drums 22 00	Galvanized. 1 bu. 1 1/2 bu.	Nail Metal Single Cut .....Gross \$4 00—\$5 00
<b>GALVANIZED.</b>	Hercules "Infallible," 10-can drums 9 00	Per doz.....\$16 03 \$18 72	<b>Reamer.</b>
No. 16.....per 100 lbs. \$5 15	Hercules "E.C." and "Infal- lible," canisters 1 00	<b>BEATERS.</b>	Standard Square.....Dox. \$2 50
No. 18-20.....per 100 lbs. 5 30	Hercules W. A. 30 Cal. Rifle, canisters 1 25	Carpet. Per doz.	American Octagon... " 2 50
No. 22-24.....per 100 lbs. 5 45	Hercules Sharpshooter Rifle, canisters 1 25	No. 7 Tinned Spring Wire..\$1 10	Screw Driver.
No. 26.....per 100 lbs. 5 60	Hercules Bullseye Revolver, canisters 1 00	No. 8 Spring Wire Cop- pered .....1 50	No. 1 Common.....20
No. 27.....per 100 lbs. 5 75	<b>ANVILS.</b>	No. 9 Preston.....1 75	No. 26 Stanley.....75
No. 28.....per 100 lbs. 5 90	Solid Wrought...23 & 23 1/2c per lb.	<b>Egg.</b>	<b>BLADES, SAW.</b>
No. 30.....per 100 lbs. 6 40	<b>ASBESTOS.</b>	No. 50 Imp. Dover.....\$1 10	Wood.
<b>BAR SOLDER.</b>	Paper up to 1/16.....10c per lb.	No. 102 " " Tinned 1 25	Disston 30-in. Nos. ....6 66 26
Warranted,	Millboard 3/32 to 1/4..10 1/2c per lb.	No. 150 " " hotel 2 10	\$9 45 \$10 05 \$9 45
50-50.....per 100 lbs. \$21 00	Corrugated Paper (250 sq. ft.).....\$6.50 per 100 lbs.	No. 10 Heavy hotel tinned 2 10	<b>BLOCKS.</b>
Commercial,	Rollboard .....11c per lb.	No. 13 " " " 3 30	Wooden .....20%
45x55.....per 100 lbs. 19 50	<b>AUGERS.</b>	No. 15 " " " 3 60	Patent .....30%
Plumber's.....per 100 lbs. 18 50	Boring Machine.....40 @ 40&10%	No. 18 " " " 4 50	<b>BOARDS.</b>
<b>ZINC.</b>	Carpenter's Nut.....50%	<b>Hand.</b>	Per doz. \$11 50 13 00 14 75 18 00
In Slabs .....\$4 75	Hollow.	Moulders'.	12-inch .....Per doz. 20 00
<b>SHEET ZINC.</b>	Bonney's.....per doz. \$30 00	Call.	<b>BELLS.</b>
Cask lots .....11c	Post Hole.	3-Inch Nickeled Rotary Bell, Bronzed base...per doz. \$5 50	Cow.
Less than cask lots...11 1/4-11 1/2c	Iwan's Post Hole and Well...30%	Kentucky .....30%	Kentucky .....30%
<b>COPPER.</b>	Vaughan's, 4 to 9 in. .....per doz. \$14.99	Door. Per doz.	New Departure Automatic \$7 50
Copper Sheet, mill base...\$0 20%	Ship.	Rotary.	3 -in. Old Copper Bell... 6 00
<b>LEAD.</b>	Ford's .....Net	3 -in. Old Copper Bell, fancy .....8 00	3 -in. Nickeled Steel Bell 6 00
American Pig .....\$4 80	<b>AWLS.</b>	3 1/2-in. Nickeled Steel Bell 6 50	<b>Hand.</b>
Bar .....5 55	No. 3 Handled...per doz. \$0 65	Hand Bell polished List plus 15%	White Metal....." 15%
Sheet.	No. 1050 Handled " 1 40	Nickel Plated....." 5%	Swiss .....10%
Full coils.....per 100 lbs. \$7 75	Patent asst'd, 1 to 4 " 85	Miscellaneous.	Church and School, steel alloys .....30%
Cut coils.....per 100 lbs. 8 00	Harness.	Farm, lbs.. 40 50 75 100	Each .....\$3 00 3 75 5 50 7 25
<b>TIN.</b>	Common .....1 05	<b>BLOCKS.</b>	
Pig tin .....31 1/4c	Patent .....1 00	Wooden .....20%	
Bar tin .....23 1/4c	Peg.	Patent .....30%	
	Shouldered .....1 60	Gem, iron.....5%	
	Patented .....75	Gem, bronze plated.....5%	



<div>Barrel.</div> <div>Cast .....Net</div> <div>Wrought .....</div> <div>Wrought, bronzed.....</div> <div>Flush.</div> <div>Wrought .....</div> <div>Spring.</div> <div>Wrought .....</div> <div>Wrought, heavy.....</div> <div>Square.</div> <div>Wrought .....</div>	<div>CEMENT, FURNACE.</div> <div>American Seal, 5 lb. cans, net \$ 45</div> <div>" " 10 lb. cans, " 90</div> <div>" " 25 lb. cans, " 1 87</div> <div>Asbestos, 5 lb. cans.... " 45</div> <div>Pecora, 5 lb. cans.... " 45</div> <div>" 10 lb. cans.... " 90</div> <div>" 25 lb. cans.... " 1 87</div> <div>CHAINS.</div> <div>Breast Chains.</div> <div>With Slide.....doz. pairs, 5 50</div> <div>Without Slide.... " 5 06</div> <div>Doubleslack..... " 9 35</div> <div>With Covert Snaps " 6 38</div> <div>Picture Chains.</div> <div>Light Brass, 3 ft. per doz. 1 25</div> <div>Heavy Brass, 3 ft. " 1 75</div> <div>Sash Chain. (Morton's)</div> <div>Steel, per 100 ft.</div> <div>0 ..... \$2 50</div> <div>2 ..... 3 10</div> <div>1 ..... 3 60</div> <div>Champion Metal.</div> <div>OR ..... 5 40</div> <div>2R ..... 5 60</div> <div>1R ..... 7 75</div> <div>Champion Metal.—Extra Heavy.</div> <div>1H ..... \$9 50</div> <div>Cable Sash Chains.</div> <div>Steel.....List Net Plus 15%</div>	<div>Quilt Frame.</div> <div>No. 30 Ball and Socket,</div> <div>2 1/2" head....per gross \$13 00</div> <div>No. 50 Ball and Socket,</div> <div>3 1/2" head....per gross 14 50</div> <div>Hose.</div> <div>Sherman's, brass, 1/2", per</div> <div>doz. .... \$0 48</div> <div>Double, brass 1/2", per doz. 1 20</div> <div>Saw Filers.</div> <div>Wentworth's, No. 1, \$12 50; No.</div> <div>2, \$13 25; No. 3, \$16 25.</div> <div>CLAWS, TACK.</div> <div>Wood hdl. No. 10...per doz. \$0 95</div> <div>Forged steel, wood hdl. " 1 75</div> <div>Solid steel ..... " 2 40</div> <div>Giant ..... " 50</div> <div>CLEANERS.</div> <div>Drain.</div> <div>Iwan's Adjustable.....25%</div> <div>Iwan's Stationary.....30%</div> <div>Pot.</div> <div>Wire .....per doz. \$0 75</div> <div>CLEAVERS.</div> <div>Family.</div> <div>Beatty's,</div> <div>inch..... 7 8 9 10</div> <div>Per doz. \$27 00 29 00 33 00 36 00</div> <div>CLEAVISES.</div> <div>Malleable .....10c lb.</div> <div>CLIPPERS.</div> <div>Bolt .....\$2 25 &amp; 6 00</div> <div>CLIPS.</div> <div>Axle .....65 @ 5%</div> <div>Damper.</div> <div>Standard .....per doz. 70c</div> <div>Troy ..... " 38c</div> <div>Hame ..... " 50c</div> <div>COLLARS, STOVE PIPE.</div> <div>Lacquered,</div> <div>Inches 5 6 7</div> <div>Fancy pattern,</div> <div>per doz.... 80c 85c \$1 15</div> <div>COMPASSES.</div> <div>Carpenters' .....15%</div> <div>COPPERS—Soldering.</div> <div>Pointed Roofing.</div> <div>3 lb. and heavier....per lb. 37c</div> <div>2 lb. .... " 38c</div> <div>2 1/2 lb. .... " 37c</div> <div>1 1/2 lb. .... " 40c</div> <div>1 lb. .... " 43c</div> <div>CORD.</div> <div>Picture.</div> <div>White Wire .....60 &amp; 5%</div> <div>Sash.</div> <div>Sampson Spot, No. 7, per</div> <div>doz. .... \$10 25</div> <div>COTTERS, SPRING.</div> <div>All sizes .....37 1/2%</div> <div>COUPLINGS, HOSE.</div> <div>Brass .....per doz. \$2 25</div> <div>CRADLES, GRAIN.</div> <div>Morgan's Grapevine per doz. \$45 00</div> <div>CUTTERS.</div> <div>Glass.</div> <div>Woodward .....40%</div> <div>Meat.</div> <div>Enterprise—Nos. 5 10 12</div> <div>Each.... \$2 50 \$4 25 \$3 75</div> <div>Nos. 22 32</div> <div>" .... 6 50 8 50</div> <div>Pipe.</div> <div>Saunders, No. 1 2 3</div> <div>Each .....\$1 85 2 75 6 75</div> <div>Slaw and Kraut. Per doz.</div> <div>4-knife Kraut.....\$20 00-55 00</div> <div>3-knife Kraut,</div> <div>8x27 in. .... 13 00-18 00</div> <div>1-knife Slaw..... 2 50</div> <div>2-knife Slaw..... 3 00</div> <div>Washer ..... 11 00</div> <div>DAMPERS, STOVE PIPE .</div> <div>Diamond.</div> <div>All sizes .....50%</div>	<div>DIGGERS.</div> <div>Post Hole.</div> <div>Eureka.....per doz. \$14 50</div> <div>Iwan's Split Handle (Eu-</div> <div>reka)</div> <div>4-ft. Handle...per doz. 15 00</div> <div>7-ft. " ....per doz. 20 00</div> <div>Iwan's Hercules pattern</div> <div>per doz. .... 18 00</div> <div>Dividers, Wing .....25%</div> <div>DRILLS.</div> <div>Blacksmiths' Twist (New</div> <div>List) .....40%</div> <div>Breast.</div> <div>Millers Falls No. 12, each \$46 00</div> <div>" " "112, " 26 00</div> <div>Hand.</div> <div>Goodell's Automatic.</div> <div>Nos. 01 03</div> <div>Per doz. 12 00 14 40</div> <div>Goodell's Single Gear, per</div> <div>doz. .... 15 75</div> <div>Goodell-Pratt No. 4 1/2, per</div> <div>doz. list, less.....30%</div> <div>Goodell-Pratt No. 379, per</div> <div>doz. list, less.....30%</div> <div>Reciprocating.</div> <div>Goodell's..... per doz. 26 00</div> <div>DRIVERS, SCREW.</div> <div>Standard .....Nets</div> <div>Lock Ferrule ..... "</div> <div>Clark's Interchangeable.... "</div> <div>Goodell's Spiral ..... "</div> <div>Yankee Ratchet ..... "</div> <div>" Spiral ..... "</div> <div>EAVES TROUGH.</div> <div>70 &amp; 10% off Standard List.</div> <div>ELBOWS—Stove Pipe.</div> <div>1-piece Corrugated, Uniform.</div> <div>Doz.</div> <div>5-inch .....\$1 50</div> <div>6-inch ..... 1 40</div> <div>7-inch ..... 2 10</div> <div>Uniform, Collar Adjustable.</div> <div>Doz.</div> <div>5-inch .....\$1 90</div> <div>6-inch ..... 2 00</div> <div>7-inch ..... 2 50</div> <div>ELBOWS—Conductor Pipe.</div> <div>Galvanized Steel, Tin and Terne,</div> <div>Round Corrugated.</div> <div>Size Doz.</div> <div>2-inch .....60%</div> <div>3-inch .....60%</div> <div>4-inch .....60%</div> <div>5-inch .....60%</div> <div>6-inch .....60%</div> <div>ENAMEL, STOVE.</div> <div>Iron, Black. Per Gross</div> <div>Peerless Glass, 1/4 pt.....\$16 20</div> <div>" " 1/2 pt..... 21 00</div> <div>Per doz.</div> <div>" " 1/4 gal.....\$12 00</div> <div>" " 1 gal.... 21 00</div> <div>Aluminum Per Gross</div> <div>Peerless, 1/4 pt..... \$42 60</div> <div>" 1/2 pt..... 61 20</div> <div>EMERY.</div> <div>Domestic, lb. ....11 1/2c</div> <div>FASTENERS, STORM SASH.</div> <div>Shroeder's .....per doz. \$1 50</div> <div>Sensible ..... " 3 00</div> <div>FILES AND RASPS.</div> <div>Simonds' .....50%</div> <div>Heller's (American) ....50&amp;10%</div> <div>American .....50-10-5%</div> <div>Arcade .....50-16-4%</div> <div>Black Diamond .....40-10-3 1/2%</div> <div>Eagle .....50-19 1/4%</div> <div>Great Western .....50-10-5%</div> <div>Kearney &amp; Foot.....50-10-5%</div> <div>McClellan .....50-10-5%</div> <div>Nicholson .....40-10-3 1/2%</div> <div>J. Barton Smith.....50-10-5%</div> <div>X F .....Net List</div> <div>FIRE POTS.</div> <div>Clayton &amp; Lambert's—</div> <div>each .....\$4 00 @ \$4 00</div> <div>Gate City .....each 6 25</div> <div>Gem .....each, \$6 75 @ 8 50</div>
<div>BOXES.</div> <div>Mail, No.... 2 4 10</div> <div>Per doz...\$18 00 \$23 00 29 00</div> <div>Mitre.</div> <div>Stanley's.....Net Prices</div> <div>Stearns, No. 2...per doz. \$48 00</div> <div>BRACES, RATCHET.</div> <div>Goodell-Pratt No. 408 .....\$4 60</div> <div>" " No. 410 ..... 4 80</div> <div>" " No. 412 ..... 5 00</div> <div>V. &amp; B. No. 444 8 in..... 4 65</div> <div>V. &amp; B. No. 333 8 in..... 4 20</div> <div>V. &amp; B. No. 222 8 in..... 4 00</div> <div>V. &amp; B. No. 111 8 in..... 3 50</div> <div>V. &amp; B. No. 11 8 in..... 3 05</div> <div>BURRS, RIVETING.</div> <div>Copper Burrs only..25% above list</div> <div>Tinner's Iron Burrs only.....30%</div> <div>BUTTS.</div> <div>Cast Iron .....7 1/2%</div> <div>Wrought Bronze, No. 175 AC</div> <div>2 1/2 .....\$1 75</div> <div>Steel, Bright, Narrow 15-7 1/2-5%</div> <div>Steel, Japanned, Narrow</div> <div>.....List+65%</div> <div>CALIPERS.</div> <div>Double .....Net</div> <div>Inside and Outside..... "</div> <div>Wing ..... "</div> <div>CALKS.</div> <div>Toe.</div> <div>Blunt and medium, 1 prong,</div> <div>per 100 lbs.....\$6 20</div> <div>Sharp, 1 prong, per 100 lbs. 6 70</div> <div>CANS.</div> <div>Milk.</div> <div>Ohio.</div> <div>Gals..... 5 8 10</div> <div>Each ....\$3 65 \$4 45 \$4 70</div> <div>Gem.</div> <div>Gals..... 5 8 10</div> <div>Each ....\$3 35 \$4 95 \$5 20</div> <div>Jersey or Holstein.</div> <div>Gals..... 5 8 10</div> <div>Each ....\$4 15 \$5 60 \$5 90</div> <div>CAN OPENERS.</div> <div>See Openers.</div> <div>CAPS, GUN.</div> <div>See Ammunition.</div> <div>CARRIERS.</div> <div>Hay.</div> <div>Diamond, Regular...each, Nets</div> <div>Diamond, Sling.... " "</div> <div>CARTRIDGES.</div> <div>See Ammunition.</div> <div>CASTERS.</div> <div>Standard—Ball Bearing,</div> <div>..... 50&amp;10%</div> <div>Bed .....40%</div> <div>Common Plate.</div> <div>Brass Wheel .....15%</div> <div>Iron and porcelain wheels,</div> <div>new list.....50%</div> <div>Philadelphia Plate, new</div> <div>list .....50%</div> <div>Martin's .....40%</div> <div>CATCHERS, GRASS.</div> <div>No. 160S, per doz.....\$12 25</div> <div>No. 165S, " ..... 14 01</div>	<div>CHALK, CARPENTERS'.</div> <div>Blue .....per gro. \$1 40</div> <div>Red ..... " 1 40</div> <div>White ..... " 1 25</div> <div>Common White School " 25c</div> <div>Crayon ..... " 25c</div> <div>CHIMNEY TOPS.</div> <div>In bags .....per bag \$1 70</div> <div>CHECKS, DOOR</div> <div>Corbin .....Net List</div> <div>Russwin .....20%</div> <div>CHISELS.</div> <div>Cold.</div> <div>Good quality, 1/4 in., each \$0 44</div> <div>" 1/2 in., " 0 28</div> <div>Diamond Point.</div> <div>V. &amp; B. No. 15, 1/4 in..... 0 23</div> <div>V. &amp; B. No. 15, 1/2 in..... 0 48</div> <div>FIRMER BEVELLED.</div> <div>Berg's (Swedish).</div> <div>1/2-inch, per doz.....\$ 4 45</div> <div>1- " " ..... 7 15</div> <div>1 1/2- " " ..... 10 15</div> <div>2- " " ..... 12 15</div> <div>2 1/2- " " ..... 26 95</div> <div>Round Nose.</div> <div>V. &amp; B. No. 65, 1/4 in..... 0 33</div> <div>V. &amp; B. No. 65, 1/2 in..... 0 44</div> <div>SOCKET FIRMER.</div> <div>Berg's (Swedish).</div> <div>1/2-inch, per doz.....\$11 95</div> <div>1- " " ..... 16 75</div> <div>1 1/2- " " ..... 23 95</div> <div>2- " " ..... 35 95</div> <div>Cape.</div> <div>V. &amp; B. No. 50, 1/4 in..... 0 29</div> <div>V. &amp; B. No. 50, 1/2 in..... 0 64</div> <div>CHUCKS, DRILL.</div> <div>Goodell's, for Goodell's Screw</div> <div>Drivers .....List less 35-40%</div> <div>Yankee, for Yankee Screw</div> <div>Drivers .....\$6 00</div> <div>CHURNS.</div> <div>Anti-Bent Wood,</div> <div>Gal. .... 5 7 10</div> <div>Each .....\$3 00 4 60 4 85</div> <div>Belle, Barrel .....65&amp;7 1/2%</div> <div>Common Dash,</div> <div>Gal. .... 5 7</div> <div>Per doz. ....\$17 00 19 00</div> <div>CLAMPS.</div> <div>Adjustable.</div> <div>Martin's .....30%</div> <div>No. 63, Screw .....20%</div> <div>Cabinet.</div> <div>Screw .....20%</div> <div>Carpenters'.</div> <div>Steel Bar..List price plus 25%</div> <div>Carriage Makers'.</div> <div>2 1/2" .....per doz. \$ 7 00</div> <div>5" ..... " 14 00</div> <div>8" ..... " 28 00</div> <div>12" ..... " 46 00</div>	<div>CLIPS.</div> <div>Axle .....65 @ 5%</div> <div>Damper.</div> <div>Standard .....per doz. 70c</div> <div>Troy ..... " 38c</div> <div>Hame ..... " 50c</div> <div>COLLARS, STOVE PIPE.</div> <div>Lacquered,</div> <div>Inches 5 6 7</div> <div>Fancy pattern,</div> <div>per doz.... 80c 85c \$1 15</div> <div>COMPASSES.</div> <div>Carpenters' .....15%</div> <div>COPPERS—Soldering.</div> <div>Pointed Roofing.</div> <div>3 lb. and heavier....per lb. 37c</div> <div>2 lb. .... " 38c</div> <div>2 1/2 lb. .... " 37c</div> <div>1 1/2 lb. .... " 40c</div> <div>1 lb. .... " 43c</div> <div>CORD.</div> <div>Picture.</div> <div>White Wire .....60 &amp; 5%</div> <div>Sash.</div> <div>Sampson Spot, No. 7, per</div> <div>doz. .... \$10 25</div> <div>COTTERS, SPRING.</div> <div>All sizes .....37 1/2%</div> <div>COUPLINGS, HOSE.</div> <div>Brass .....per doz. \$2 25</div> <div>CRADLES, GRAIN.</div> <div>Morgan's Grapevine per doz. \$45 00</div> <div>CUTTERS.</div> <div>Glass.</div> <div>Woodward .....40%</div> <div>Meat.</div> <div>Enterprise—Nos. 5 10 12</div> <div>Each.... \$2 50 \$4 25 \$3 75</div> <div>Nos. 22 32</div> <div>" .... 6 50 8 50</div> <div>Pipe.</div> <div>Saunders, No. 1 2 3</div> <div>Each .....\$1 85 2 75 6 75</div> <div>Slaw and Kraut. Per doz.</div> <div>4-knife Kraut.....\$20 00-55 00</div> <div>3-knife Kraut,</div> <div>8x27 in. .... 13 00-18 00</div> <div>1-knife Slaw..... 2 50</div> <div>2-knife Slaw..... 3 00</div> <div>Washer ..... 11 00</div> <div>DAMPERS, STOVE PIPE .</div> <div>Diamond.</div> <div>All sizes .....50%</div>	<div>DRIVERS, SCREW.</div> <div>Standard .....Nets</div> <div>Lock Ferrule ..... "</div> <div>Clark's Interchangeable.... "</div> <div>Goodell's Spiral ..... "</div> <div>Yankee Ratchet ..... "</div> <div>" Spiral ..... "</div> <div>EAVES TROUGH.</div> <div>70 &amp; 10% off Standard List.</div> <div>ELBOWS—Stove Pipe.</div> <div>1-piece Corrugated, Uniform.</div> <div>Doz.</div> <div>5-inch .....\$1 50</div> <div>6-inch ..... 1 40</div> <div>7-inch ..... 2 10</div> <div>Uniform, Collar Adjustable.</div> <div>Doz.</div> <div>5-inch .....\$1 90</div> <div>6-inch ..... 2 00</div> <div>7-inch ..... 2 50</div> <div>ELBOWS—Conductor Pipe.</div> <div>Galvanized Steel, Tin and Terne,</div> <div>Round Corrugated.</div> <div>Size Doz.</div> <div>2-inch .....60%</div> <div>3-inch .....60%</div> <div>4-inch .....60%</div> <div>5-inch .....60%</div> <div>6-inch .....60%</div> <div>ENAMEL, STOVE.</div> <div>Iron, Black. Per Gross</div> <div>Peerless Glass, 1/4 pt.....\$16 20</div> <div>" " 1/2 pt..... 21 00</div> <div>Per doz.</div> <div>" " 1/4 gal.....\$12 00</div> <div>" " 1 gal.... 21 00</div> <div>Aluminum Per Gross</div> <div>Peerless, 1/4 pt..... \$42 60</div> <div>" 1/2 pt..... 61 20</div> <div>EMERY.</div> <div>Domestic, lb. ....11 1/2c</div> <div>FASTENERS, STORM SASH.</div> <div>Shroeder's .....per doz. \$1 50</div> <div>Sensible ..... " 3 00</div> <div>FILES AND RASPS.</div> <div>Simonds' .....50%</div> <div>Heller's (American) ....50&amp;10%</div> <div>American .....50-10-5%</div> <div>Arcade .....50-16-4%</div> <div>Black Diamond .....40-10-3 1/2%</div> <div>Eagle .....50-19 1/4%</div> <div>Great Western .....50-10-5%</div> <div>Kearney &amp; Foot.....50-10-5%</div> <div>McClellan .....50-10-5%</div> <div>Nicholson .....40-10-3 1/2%</div> <div>J. Barton Smith.....50-10-5%</div> <div>X F .....Net List</div> <div>FIRE POTS.</div> <div>Clayton &amp; Lambert's—</div> <div>each .....\$4 00 @ \$4 00</div> <div>Gate City .....each 6 25</div> <div>Gem .....each, \$6 75 @ 8 50</div>





<b>LINING, STOVE.</b> Bricks .....per crate 42c	<b>NAIL SETS.</b> See Sets.	<b>PARERS.</b> Apple. Goodell's .....per doz. \$10 80 Turntable ..... " 11 40 White Mountain " 8 40 Reading No. 78 " 11 40	<b>Lineman's Side Cutting.</b> Berg's (Swedish). In. 6 7 8 Blk. Pol. Face, doz. ....\$10 70 20 00 23 25
<b>LOCKS.</b> Barn Door. No. 60 Stearns...per doz. \$13 00 No. 80 " " " 24 00	<b>NETTING, POULTRY.</b> Galvanized before weaving...50% Galvanized after weaving...40%	<b>PICKS.</b> Adze Eye Ore.....22 1/4% Drifting and Pool Picks...22 1/4% Plumbs, Railroad.....22 1/4% Surface.....22 1/4%	<b>Long Nose Side Cutting.</b> Berg's (Swedish) In. 5 6 Blk. Pol. Face, doz. ....\$12 25 15 20
<b>MACHINES.</b> Riveting. Stearns No. 1...per doz. \$16 00  Tenoning. No. 50 Peace's Spoke, each \$16 00	<b>NIPPERS.</b> End Cutting. Berg's (Swedish) In. 5 6 Per dozen.....\$12 60 15 20  End and Diagonal Cutting. Berg's (Swedish) In. 5 6 Per dozen .....\$10 05 13 00	<b>PINCERS.</b> Carpenters', cast steel, No. ... 8 10 12 Each \$0 55 \$0 72 \$0 93 \$1 03 Blacksmiths', No. 10.....\$ 96 Heller's .....List plus 10%	<b>Flat and Round Nose.</b> Berg's (Swedish) Flat, In. 4 6 8 Blk. Pol. Face, doz. ....\$8 90 13 25 19 65 Berg's (Swedish) Round, In. 4 6 8 Blk. Pol. Face Dox. .... \$11 15 16 30 23 25
<b>MAIL BOXES.</b> See Boxes.	<b>HOOF.</b> Heller's .....40&10% V. & B., No. 52, each....\$2 25	<b>PINS.</b> Clothes Common, per box of 5 gro. \$0 95  Picket. Fluter, 15-in.....per doz. \$1 10 Fluted, 21-in..... " 1 60 Spiral ..... " 1 90	<b>POINTERS, SPOKE.</b> Stearns' No. 1...per doz. \$10 00 " No. 2.... " 12 00
<b>MALLETS.</b> Carpenters'. Fibre Head, No. 1 per doz. \$16 50 " No. 3 " 19 50 " No. 4 " 28 50  Round Hickory ..... per doz. \$3 00—5 00  Round Lignumvitae " 6 25—10 50 Square Hickory " 3 50—5 50 Square Lignumvitae " 3 00—12 00	<b>NOZZLES.</b> Hose. Magic .....per doz. \$0 50 Diamond ..... " 5 75	<b>PINE.</b> Conductor. Plain Round and Round Corrugated. 29 Gauge .....40% 28 " .....45% 26 " .....35% 24 " .....10% Square Corrugated A and B and Octagon. 29 Gauge .....40% 28 " .....40% 26 " .....30% 24 " .....10% Galvanized Toncan Metal, Genuine O. H. Iron, Lyonesse Metal, Charcoal Iron and Keystone C. B. Plain Round and Round Corrugated. 29 Gauge .....40% 28 " .....35% 26 " .....10% 24 " .....10% Square Corrugated A and B Polygon and Octagon. 29 Gauge .....40% 26 " .....30% 24 " .....10% 14 and 16-oz. Copper, all designs .....10%	<b>POKERS, STOVE.</b> Wrt Steel, str't or bent, .....per doz. \$0 75 Nickel Plated, coil handle " 1 10
<b>MATS.</b> Door. National Rigid .....5&10&15% Acme Steel Flexible.....50%	<b>NUTS, HOT PRESSED.</b> Square Tapped. \$2.41 off per 100 lbs. Hexagon Tapped. \$2.41 off per 100 lbs.	<b>OPENERS.</b> Can. Delmonico .....per doz. \$1 30 Never Slip..... " 65 Crate. V. & B.....per doz. \$7 25-11 00	<b>POLISH.</b> Metal. Wizard, 6-oz. per gross \$21 00 " 1/4-pt. " " 24 00 " 1/2-gal. " " 13 00 " 1-gal. " " 21 00
<b>MEASURES.</b> Galvanized, doz .....Nets Japanned, doz .....Nets	<b>OILERS.</b> Chase Pattern. Brass and Copper.....10% Zinc.....20%	<b>OUTFITS, COBBLING.</b> Combination .....per doz. \$16 00 Economy ..... " 8 50 Family ..... " 14 50	<b>PRESSSES, FRUIT AND JELLY.</b> Enterprise Manufacturing Co. 25%
<b>MATTOCKS.</b> Plumbs ..... 25%	<b>PAIRS.</b> Cream. 14-qt. without gauge, .....per doz. \$9 50 18-qt. without gauge, .....per doz. 11 00 20-qt. without gauge, .....per doz. 11 75  Sap. 10-qt., IC Tin....per doz. \$4 00 12 " " " " 5 50	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PRUNERS.</b> Dianston's Pole...per doz. \$18 00 Water's Improved...per doz. 60%
<b>MAULS.</b> Wood Choppers'. Lake Superior & Oregon pat. ....40&5%	<b>STEEL.</b> Copper Plated .....50-10-5%	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78
<b>MILLS, COFFEE.</b> Arcade .....40-10%	<b>STOCK.</b> Galv. qts. 14 16 18 20 Per doz. \$9 75 10 75 12 75 14 50	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78
<b>MITRE BOXES.</b> See Boxes.	<b>WATER.</b> Galvanized qts. 10 12 14 Per doz. ....\$5 75 6 50 7 25	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78
<b>MOPS.</b> Cotton. Star (Cut Ends). Pounds 12' 15' 18' 24'-3-oz. Per doz. \$4 50 5 55 6 75 9 00 Enterprise .....15% Parker .....50&5%	<b>WOOD.</b> Cable, 3-Hoop....per doz. Nets Cable, 3-Hoop.... " Nets Cedar, 3-Hoop, brass " Nets	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78
<b>NAILS.</b> Cut Steel .....\$4 45 Cut Iron ..... 4 45	<b>FANS.</b> Dripping .....Net Fry. Common .....Nets Acme ..... "	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78
<b>WIRE.</b> Common ..... 4 00	<b>ROASTING.</b> Paxton, Nos. .... 1 3 3 4 Per doz. ....Nets Neverburn ..... Savory, No. 200...per doz. \$8 40	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78
<b>Cement Coated.</b> Small Lots..... 4 20	<b>SAND AND EMERY.</b> No. 1, per ream, best grade \$5 40 No. 1, per ream, cheaper grade ..... 4 85	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78
<b>HORSESHOE.</b> Ausable .....55&5% Capewell .....15% Perfect .....55&5% Putnam .....30&5% Star .....30&5%	<b>SEE SETS.</b>	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78
<b>Picture.</b> Brass Heads .....25%	<b>SEE SETS.</b>	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78
<b>Brads.</b> .....50&5%	<b>SEE SETS.</b>	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78
<b>Furniture.</b> .....List plus 15%	<b>SEE SETS.</b>	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78
<b>NAIL PULLERS.</b> See Pullers.	<b>SEE SETS.</b>	<b>PAPER.</b> Roofing. per square Major, 1-ply .....\$1 23 " 3-ply ..... " 2 24 " 3-ply ..... " 3 24 Red Rosin.....per ton \$111 45	<b>PULLERS.</b> Cork. Daisy .....each \$2 10 Phoenix ..... " 1 40 Quick and Easy.... " 2 78

<b>PATTY.</b> Strictly pure...per 100 lbs. \$6 00	<b>SAWS.</b> <b>Band.</b> Disston's 2 in. to 18 in.... 25, 10 & 5% Disston's 1/4-in. to 1 1/4-in.... 25 & 10% <b>Butchers'.</b> Disston's No. 2, 14-in.... 18 30 " No. 2, 18-in.... 19 50 " No. 2, 22-in.... 20 85 " No. 7, 16-in.... 20 00 " No. 7, 20-in.... 21 35 " No. 7, 24-in.... 23 35 " No. 7, 28-in.... 26 00 <b>Compass.</b> Disston's No. 20 Jackson. 4 00 " No. 40 Sampson. 2 50 " No. 2 & 77, 10-in. 6 05 " No. 9, 10 in.... 6 80 <b>Cross-Cut.</b> Disston's No. 289, 4-ft.... 3 15 " No. 289, 6-ft.... 6 15 " No. 289, 8-ft.... 10 65 <b>Flooring.</b> Disston's D19, 16-in.... 24 50 " D19, 20-in.... 31 00 <b>Hand and Rip.</b> Disston's No. 7, 20-in.... 19 30 " No. 7, 32-in.... 35 40 " No. 8, 16-in.... 17 55 " No. 8, 20-in.... 20 75 " No. 8, 24-in.... 24 40 " No. 8, 28-in.... 29 50 " No. 8, 30-in.... 32 95 Keystone .....New Nets <b>Keyhole.</b> Disston's No. 5, complete 3 35 " No. 10, complete 3 70 " No. 95, complete 5 75 <b>Miter Box.</b> Disston's No. 4, 4x20-in.. 36 15 " No. 4, 5x22-in.. 43 25 " No. 4, 6x22-in.. 47 20 <b>Patternmakers'.</b> Disston's 7 1/4-in ..... 12 05 <b>Pruning.</b> Disston's No. 20.....\$18 75 <b>Stairbuilders'.</b> Disston's 6-in. .... 7 90 <b>Wood.</b> Disston's No. 111, 30-in.. 22 20 " No. 111, 32-in.. 22 75 " No. 47, 30-in.. 20 25 " No. 47, 32-in.. 20 80	<b>SETS.</b> <b>Nail.</b> Square head.....per doz. 1 84 Cup point, knurled " 1 75 <b>Rivet.</b> Farmers' .....per doz. 2 50 Tinnars' 3-4 ..... 5 75 " 00-0 ..... 8 75 <b>Saw.</b> Atken's Pattern...per doz. \$6 50 Disston's Monarch No. 2 ..... 9 90 Disston's Monarch No. 12 ..... 13 20 Leach's ..... 80 Nash's Hand .... 2 15 Nash's X-cut .... 4 20 Stillman's Lever.. " 1 30 Stillman's X-cut .. " 2 50 Whiting Pattern, " 7 50 No. 21 ..... Eccentric Anvil, Hand No. 395, N. P. Morrill Pat- tern ..... 14 50	<b>SPRINKLERS, LAWN.</b> Stearn's No. 1....per doz. \$11 50 <b>SQUARES.</b> Steel and Iron.....Net (Add for bluing, \$3.00 per doz. net) Mitre .....Net Try ..... Try and Bevel..... Try and Miter..... Fox's .....per doz. \$5 00 Winterbottom's .....10% <b>SQUEEZERS, LEMON.</b> Common Wood....per doz. \$9 70 Porcelain Lined, Wood " 1 35 Boss, malleable iron " 1 30 Iron frame porcn " 1 90 bowl ..... Iron frame, glass " 2 35 Little Giant, tin'd " 4 00 Drum, japanned " 2 50 Drum, nickel plated. " 4 50
<b>RAIL.</b> <b>Barn Door.</b> Matchless, 1-in..... 5c Matchless, 1 1/4-in.... 7c Storm King ..... 5c <b>Sliding Door.</b> Bronzed wrought iron, ..... per ft. 3 1/4c <b>RAKES.</b> <b>Garden.</b> per doz. Steel, Bow, 12-in. Teeth \$2 50 Steel, Bow, 14-inch " 3 25 Malleable Iron, 12-in. " 4 75 Malleable Iron, 14-in. " 5 00 <b>Hay.</b> Wood, 10 Teeth.....\$4 90 <b>Lawn.</b> 20 Teeth .....per doz. 5 50	<b>SHARPENERS, SKATE.</b> Diamond .....per doz. \$1 60 Perfect ..... 1 20 <b>SHEARS.</b> Nickel Plated, Straight, 6" \$12 90 " " " 7" 14 85 " " " 8" 16 80 Japanned, Straight .... 6" 11 00 " " " 7" 12 40 " " " 8" 13 80 <b>SHEAVES, SLIDING DOOR.</b> Common. Inches ..... 3 4 5 Per set .....\$1 40 1 75 2 40 <b>Hatfield's.</b> Per set \$1 80 2 10 2 75 25 <b>SHELLERS, CORN.</b> Union ..... per doz. \$6 75 <b>SHIELDS.</b> Expansion Bolt Shields.....60% <b>SHINGLES.</b> Per Square Zinc (Illinois).....\$15 00 <b>SHOES.</b> Conductor .....60% <b>SHOT—See Ammunition.</b> <b>SHOVELS AND SPADES.</b> Coal. Hubbard's No. A B C D 1 \$16 00 15 10 14 45 13 70 2 16 35 15 60 14 85 14 10 3 16 75 16 00 15 25 14 45 4 17 10 16 35 16 60 14 85 <b>Post Drains &amp; Ditching.</b> Hubbard's Size ..... A B C 14" ..... 17 15 16 40 15 65 16" ..... 17 50 16 75 16 00 18" ..... 17 85 17 10 16 85 20" ..... 18 20 17 45 16 70 22" ..... 18 55 17 80 17 05 <b>Snow.</b> Hubbard Special, Long Handle .....\$10 00 D-Handle ..... 11 00 Sidewalk Scraper ..... 6 50 <b>Alaska Steel.</b> D-Handle .....per doz. \$3 50 Long Handle ..... 3 00	<b>STAPLES.</b> <b>Blind.</b> Barbed .....per lb. 21 @ 22c <b>Butter, Tub</b> ..... 16 @ 19c <b>Fence—</b> Polished .....per 100 lbs. \$5 45 Galvanized " " \$ 15 <b>Netting.</b> Galvanized .....per 100 lbs. 6 50 <b>Wrought.</b> Wrought Staples, Hasps and Staples, Hasps, Hooks and Staples, and Hooks and Staples .....50&10% Extra heavy .....35@ <b>STEELYARD.</b> Discount 25%. <b>STONES.</b> <b>Axe.</b> Hindustan .....per lb. New Nets More Grit " " " Washita " " " <b>Emery.</b> No. 125.....per doz. New Nets <b>Oil—Mounted.</b> Arkansas Hard No. 7.....per doz. New Nets Arkansas Soft " " Washito No 717. " " <b>Oil—Unmounted.</b> Arkansas Hard per lb. New Nets Arkansas Soft.. " " Lily White.... " " Quaker Creek... " " Washita ..... " "	
<b>RAZORS—SAFETY.</b> Gillette .....per doz. \$45 00 Auto Strop ..... 45 00 Gem ..... 2 40 Gem (3 doz. lots) " 8 00 Ever Ready ..... 2 40 Ever Ready (3 doz. lots) " 8 00 <b>RAZOR STROPS.</b> Star (Honing) .....50% <b>REGISTERS.</b> Cast Iron .....20% Steel and Semi-Steel.....30% Baseboard .....20% Adjustable Ceiling Ventilators 30% <b>REGISTER FACES.</b> Japanned, Bronzed and Plated. 4x6 to 14x14.....30% 14x14 to 38x42.....50% <b>REVOLVERS.</b> Iver Johnson Safety Automatic Hammer .....Net Hammerless ..... I. J. Model 199....." <b>RINGS AND RINGERS.</b> <b>Ball.</b> Copper .....2 1/4-in. 1-in. Per doz. ....\$2 40 \$3 45 Fox's Improved Self- Plating copper, ..... doz. 2 40 Steel, per doz..... 1 50 1 80 <b>Bag.</b> Blair's Rings ...per doz. \$ 75 Blair's Ringers.. " 1 09 Brown's Ringers.. " 72 Brown's Ringers.. " 1 00 Hill's Ringers.... " 1 00 Hill's Ring, boxes " 72 Major Rings ..... 40 Perfect Ringers " 1 50 Wolverine Rings. " 1 10 Wolverine Ringers " 1 10 <b>Fruit Jar.</b> White .....per lb. 30 <b>Key.</b> Split, round.....per doz. \$0 17 Split, square .... " 32 Ball round ..... " 40	<b>SCISSORS.</b> Star .....60% <b>SCOOPS.</b> Hubbard Western Pattern Riveted. Size.. A B C D 1 \$16 75 16 00 15 25 14 45 4 17 85 17 10 16 35 15 60 6 18 65 17 85 17 10 16 35 <b>SCRAPERS.</b> <b>Box.</b> Triangular, No. 6 per doz. \$6 25 <b>Road.</b> Cubic ft. .... 7 5 3 With runners, ea. \$7 00 6 50 6 20 <b>SCREEN DOOR HINGES.</b> Cast iron .....gross \$13 00 Steel ..... 9 50 <b>SCREWS.</b> <b>Bench.</b> Iron, ins. 1 1 1/4 1 1/4 \$6 32 7 87 9 45 16 80 Wood, white maple, per doz. 6 00 <b>Hand—Wood</b> .....50% <b>Hand Rail</b> .....22% <b>Jack</b> .....30% <b>Lag or Coach—all sizes, gimlet</b> pointed .....45-50% <b>Saw—Centennial.</b> Nos. .... 1 2 3 4 Per doz. ....47c 55c 75c 90c <b>Wood.</b> F. H. Bright .....72 1/4-20% F. H. Blued .....70-20% F. H. Jap'd .....65-20% F. H. Brass .....65-20% R. H. Brass .....62 1/4-20% <b>SCYTHES.</b> Clipper, Grass ...per doz. \$13 50 Honest Dutchman.. " 13 00	<b>SINKS.</b> Cast Iron. Painted, 16x24 .....Net Enameled, White, 16x24.. " <b>Wrought Steel.</b> Painted, 16x24 ..... " <b>SNAPS, HARNESS.</b> Covered Spring.....Add 30% Judd's Pattern Add 33 1/3% to list <b>SNATHS.</b> Double Ring, Bush...per doz. \$9 75 Patent Loop, Bush.. " 10 00 Patent Loop, Grass " 8 75 <b>SNIPS, TINNERS'.</b> Clover Leaf .....40&10% National .....40&10% Star .....50% <b>SPRINGS, DOOR.</b> Perfect. Nos. .... 2 3 4 5 6 7 Per doz. 55c 60c 65c 75c 90c 1 00 Reliance. Light Medium Heavy Per doz. \$1 55 2 10 3 20 Torrey's .....per doz. 1 65	
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**Ceilings—Metal.**  
 Burton Co., W. J., Detroit, Mich.  
 Friedley-Voshardt Co., Chicago, Ill.  
 Hopson Co., W. C., Grand Rapids, Mich.  
 Milwaukee Corrugating Co., Milwaukee, Wis.  
 Northern Corrugating Co., Green Bay, Wis.  
 Wheeling Corrugating Co., Wheeling, W. Va.

**Chain—Sash.**  
 Parker Supply Co., New York, N. Y.

**Chaplets.**  
 Fanner Mfg. Co., Cleveland, Ohio

**Chisels.**  
 Vaughan & Bushnell Mfg. Co., Chicago, Ill.

**Clips—Damper.**  
 Carr Supply Co., Chicago, Ill.  
 Waterloo Register Co., Waterloo, Iowa

**Coal Chutes.**  
 Peerless Foundry Co., Indianapolis, Ind.  
 Sykes Co., The, Chicago, Ill.

**Coasters.**  
 The Auto-Wheel Coaster Co., Inc., No. Tonawanda, N. Y.

**Cores—Radiator, Auto**  
 Curfman Mfg. Co., F. L., Maryville, Mo.  
 G. & O. Mfg. Co., New Haven, Conn.

**Cornices.**  
 Burton Co., W. J., Detroit, Mich.  
 Friedley-Voshardt Co., Chicago, Ill.  
 Milwaukee Corrugating Co., Milwaukee, Wis.

**Cut-Offs—Rain Water.**  
 Sullivan-Geiger Co., Indianapolis, Ind.

**Dry Paste.**  
 Carr Supply Co., Chicago, Ill.

**Dumb Waiters.**  
 Sedgwick Machine Works, New York, N. Y.

**Eaves Trough.**  
 Abbott Mfg. Co., Cleveland, Ohio  
 Berger Bros. Co., Philadelphia, Pa.  
 Burton Co., The W. J., Detroit, Mich.  
 Clark-Smith Hardware Co., Peoria, Ill.  
 Lupton's Sons Co., David, Philadelphia, Pa.  
 Milwaukee Corrugating Co., Milwaukee, Wis.  
 Northern Corrugating Co., Green Bay, Wis.

**Elbows and Shoes—Conductor.**  
 American Rolling Mill Co., Middletown, Ohio  
 Dieckmann Co., Ferdinand, Cincinnati, Ohio  
 Lupton's Sons Co., David, Philadelphia, Pa.  
 Milwaukee Corrugating Co., Milwaukee, Wis.

**Elevators—Hand and Power.**  
 Kimball Bros. Co., Council Bluffs, Iowa  
 Sedgwick Machine Works, New York, N. Y.

**Enamel—Iron.**  
 Black Silk Stove Polish Works, Sterling, Ill.

**Enamels—Wood.**  
 Cornish & Co., J. B., Chicago, Ill.  
 Federal Varnish Co., Chicago, Ill.

**Fence Gates.**  
 American Steel & Wire Co., Chicago, Ill.

**Fenders.**  
 Meyers Mfg. Co., Fred J., Hamilton, Ohio

**Files.**  
 Heller Bros. Co., Newark, N. J.

**Flux—Aluminum.**  
 Roesch, Geo. E., Aurora, Ill.

**Freezers—Ice Cream.**  
 North Bros. Mfg. Co., Philadelphia, Pa.

**Furnace Rings.**  
 Independent Reg. & Mfg. Co., Cleveland, Ohio  
 Walworth Run Fdy. Co., Cleveland, Ohio

**Garages—Metal.**  
 Wellman Supply Co., Springfield, Mass.

**Guards—Fire.**  
 Meyers Mfg. Co., Fred J., Hamilton, Ohio

**Hammers.**  
 Vaughan & Bushnell Mfg. Co., Chicago, Ill.

**Handles—Boiler.**  
 Berger Bros. Co., Philadelphia, Pa.

**Handles—File.**  
 Parker Supply Co., New York, N. Y.

**Hangers—Eaves Trough.**  
 Abbott Mfg. Co., Cleveland, Ohio  
 W. C. Hopson Co., Grand Rapids, Mich.

**Heaters—School Room.**  
 Haynes-Langenberg Mfg. Co., St. Louis, Mo.  
 Meyer Furnace Co., Peoria, Ill.  
 Monroe Fdy. & Furnace Co., Monroe, Mich.  
 Peerless Foundry Co., Indianapolis, Ind.  
 Standard Furnace & Supply Co., Omaha, Neb.

**Heaters—Warm Air.**  
 American Furnace Co., St. Louis, Mo.  
 Black Diamond Furnace Co., Monmouth, Ill.  
 Carr Supply Co., Chicago, Ill.  
 Central Heating Supply Co., Chicago, Ill.  
 Cooperative Foundry Co., Rochester, New York  
 Forest City Fdy. & Mfg. Co., Cleveland, Ohio  
 Haynes-Langenberg Mfg. Co., St. Louis, Mo.  
 Hall-Neal Furnace Co., Indianapolis, Ind.  
 Hammond Heating Co., Cincinnati, Ohio  
 Henry Furnace & Fdy. Co., Cleveland, Ohio  
 Hess-Snyder Co., Massillon, Ohio  
 Independent Stove Co., Owosso, Mich.  
 Lennox Furnace Co., Marshalltown, Iowa  
 Mahoning Fdy. Co., Youngstown, Ohio  
 Manny Heating Supply Co., Chicago, Ill.

**Heaters—Warm Air—Cont.**  
 May-Fieberger Furnace Co., Newark, Ohio  
 Meyer Furnace Co., Peoria, Ill.  
 Monitor Stove Co., Cincinnati, Ohio  
 Monroe Fdy. & Furnace Co., Monroe, Mich.  
 Peerless Foundry Co., Indianapolis, Ind.  
 Premier Warm Air Heater Co., Dowagiac, Mich.  
 Rudy Furnace Co., Dowagiac, Mich.  
 Rybolt Heater Co., Ashland, Ohio  
 Scheible-Moncrief Heater Co., Cleveland, Ohio  
 Schill Bros. Co., Crestline, Ohio  
 Schwab & Sons Co., R. J., Milwaukee, Wis.  
 Standard Furnace & Supply Co., Omaha, Neb.  
 St. Louis Heating Co., St. Louis, Mo.  
 Waterloo Register Co., Waterloo, Iowa  
 Wellston Mfg. Co., Wellston, Ohio  
 Wise Furnace Co., Akron, Ohio

**Holders—Flag Pole.**  
 Enterprise Mfg. Co. of Pa., Philadelphia, Pa.

**Horse Shoes.**  
 American Steel & Wire Co., Chicago, Ill.

**Humidifiers.**  
 Haynes, Kansas City, Mo.

**Incubators.**  
 Queen Incubator Co., Lincoln, Nebr.

**Indoor Closet.**  
 Independent Reg. & Mfg. Co., Cleveland, Ohio

**Jobbers—Hardware.**  
 Bullard & Gormley Co., Chicago, Ill.  
 Clark-Smith Hardware Co., Peoria, Ill.

**Kitchen Utensils.**  
 Lalanc & Grosjean Mfg. Co., Chicago, Ill.

**Lath—Expanded Metal**  
 Milwaukee Corrugating Co., Milwaukee, Wis.

**Machines—Crimping.**  
 Bertsch & Co., Cambridge City, Ind.  
 Niagara Machine & Tool Works, Buffalo, N. Y.

**Machinery—Culvert.**  
 Bertsch & Co., Cambridge City, Ind.

**Machines—Razor Blades.**  
 Hyfield Mfg. Co., New York, N. Y.

**Machines—Stove Pipe.**  
 Hemp & Co., St. Louis, Mo.

**Machines—Tinsmiths.**  
 Bertsch & Co., Cambridge City, Ind.  
 Dreis & Krump Mfg. Co., Chicago, Ill.  
 Hemp & Co., St. Louis, Mo.  
 Knedler, Frederick J., Philadelphia, Pa.  
 Maplewood Machinery Co., Chicago, Ill.  
 Marshalltown Mfg. Co., Marshalltown, Iowa  
 Niagara Machine & Tool Works, Buffalo, N. Y.  
 Whitney Mfg. Co., W. A., Rockford, Ill.

**Mailing Lists.**  
 Ross-Gould, St. Louis, Mo.

**Meat and Food Choppers.**  
 Enterprise Mfg. Co. of Pa., Philadelphia, Pa.

**Metals—Perforated.**  
 Harrington & King Perforating Co., Chicago, Ill.

**Miters.**  
 Friedley-Voshardt Co., Chicago, Ill.

**Nails—Slatting.**  
 Hussey & Co., C. G., Pittsburgh, Pa.

**Nails—Wire.**  
 American Steel & Wire Co., Chicago, Ill.

**Ornaments—Sheet Metal.**  
 Friedley-Voshardt Co., Chicago, Ill.  
 Gerock Bros. Mfg. Co., St. Louis, Mo.

**Patterns—Stove.**  
 Cleveland Castings Pattern Co., Cleveland, Ohio  
 Quincy Pattern Co., Quincy, Ill.  
 Shaw & Son Co., The Geo. E., Cleveland, Ohio  
 Taft Metal Pattern & Mfg. Co., Cleveland, Ohio  
 Vedder Pattern Works, Troy, N. Y.

**Pipe and Fittings—Furnace.**  
 Carr Supply Co., Chicago, Ill.  
 Central Heating Supply Co., Chicago, Ill.  
 Henry Furnace & Fdy. Co., Cleveland, Ohio  
 Lamneck Co., W. E., Columbus, Ohio  
 Manny Heating Supply Co., Chicago, Ill.  
 Meyer & Bro. Co., F., Peoria, Ill.  
 Michigan Safety Furnace Pipe Co., Detroit, Mich.  
 Standard Furnace & Supply Co., Omaha, Neb.

**Pipe and Fittings—Stove.**  
 Hemp & Co., St. Louis, Mo.  
 Meyer & Bro. Co., F., Peoria, Ill.  
 Sullivan-Geiger Co., Indianapolis, Ind.

**Pipe—Conductor**  
 Berger Bros. Co., Philadelphia, Pa.  
 Burton Co., W. J., Detroit, Mich.  
 Clark-Smith Hdw. Co., Peoria, Ill.  
 Dieckmann Co., Ferdinand, Cincinnati, Ohio  
 Friedley-Voshardt Co., Chicago, Ill.  
 Hussey & Co., C. G., Pittsburgh, Pa.  
 Lupton's Sons Co., David, Philadelphia, Pa.  
 Milwaukee Corrugating Co., Milwaukee, Wis.

**Polish—Metal and Stove.**  
 Black Silk Stove Polish Co., Sterling, Ill.

**Posts—Steel Fence.**  
 American Steel & Wire Co., Chicago, Ill.

**Presses—Lard.**  
 Enterprise Mfg. Co. of Pa., Philadelphia, Pa.

**Punches.**  
 Bertsch & Co., Cambridge City, Ind.  
 Niagara Machine & Tool Wks., Buffalo, N. Y.  
 Whitney Mfg. Co., W. A., Rockford, Ill.

**Punches—Combination Bench and Hand**  
 Parker Supply Co., New York, N. Y.

**Punches—Hand.**  
 Parker Supply Co., New York, N. Y.